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THE REFRIGERATION SERVICE ENGINEER, Nickerson & Collins Co., Publishers, 435 N. Waller Ave., Chicago, 44, Ill. Published monthly. Vol. 13. No 10. October, 1945. Entered as second class matter March 4, 1938, Chicago, Ill., under the Act of March 3, 1879. Subscription in the United States, $2.00 per year; all other countries, $3.00 per year.

Drying the Evaporator and Refrigerant Lines with CO_2 Gas and Alcohol

No. 5 of a Series

When an expansion valve freeze-up due to moisture is corrected by applying heat to the valve body, the moisture passes into the evaporator and forms ice. It does not stay in the evaporator permanently as ice, however, but sublimes and continually circulates through the system and will eventually cause another freeze-up at the expansion valve. Therefore, moisture should be REMOVED from the system to insure trouble-free operation.

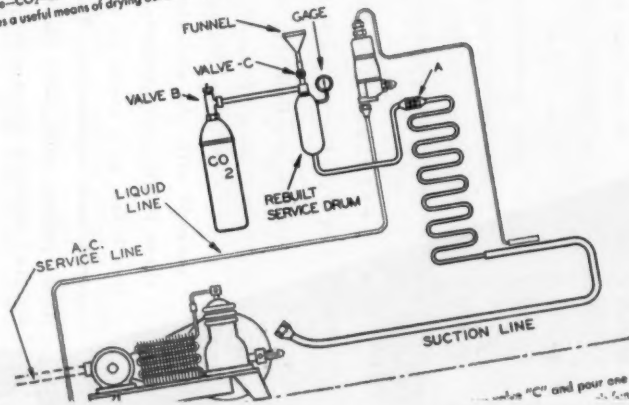
Carbon dioxide—CO_2—in combination with pure methyl alcohol provides a useful means of drying out an evaporator.

refrigerant drum (approximately 4" dia. x 12" long) with welded pipe and gauge connections as shown.

PROCEDURE: 1. Disconnect evaporator at both ends (expansion valve not in circuit) and allow it to warm to room temperature.

2. Make connection "A" to evaporator inlet.

3. With coil outlet connection open to atmosphere, close valve "C", open valve "B" until gauge shows approximately 200 psi and blow coil out thoroughly.



...lve "C" and pour one quart of ... funnel.

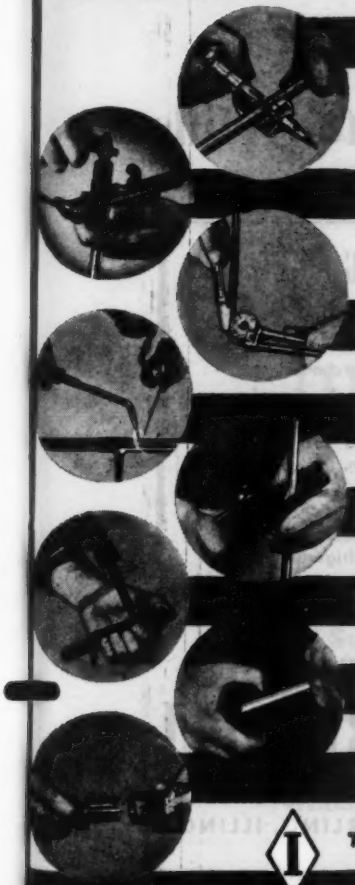
Space limitations prevent giving the full text of this service help on this page. The service bulletin illustrated here is complete. Write for your copy.

Speed your tubing connection work with Imperial Tools

The first step in any tube working job is to have good tube working tools—tools that are well-designed, well-made, durable and that make it easy to do *faster* and *better* work. Imperial makes tools like these—and no others. Whatever your tubing job may be, depend on Imperial—the tubing service line that's complete.

See your jobber.

USE THIS HANDY TUBE WORKING TOOL SELECTOR . . .



SIZE TUBING SERVICED	SPECIAL FEATURES OR DESCRIPTION	CATALOG NUMBER
3/16" to 3/4"	Roller-type, with flare cut-off groove	174-F
3/16" to 1 1/16"	Roller-type, with flare cut-off groove	212-F
3/16" to 3/4"	Small, pocket-size cutter	127-F
1/16" to 2 3/16"	Sawing vise	184-F
1 1/16" to 4"	Sawing vise	185-F
3/16" to 1/2"	Has quick slip-on yoke	193-F
3/16" to 3/4"	Has quick slip-on yoke	195-F
3/16" to 3/4"	Self-clamping type	295-FS
3/16" to 3/4"	Wide range type	175-F
3/16" to 1/2"	For smaller range of diameters	93-F
3/16" to 3/4"	For smaller range of diameters	95-F
3/16" to 1"	For larger sizes	103-F
3/16" to 1/2"	For double-flaring metal tubing	93-FB
3/16" to 3/4"	For double-flaring plastic tubing	175-FP
3/16" to 3/4"	Set of 6 spring-type benders	101-F
1/16" to 3/4"	Open-side bender. Positions anywhere on tube. Individual bender for each size	364-F
3/16" to 3/4"	Heavy-duty bender outfit	360-F
For use on all solder fitting work.	Outfit includes torch, 4 tips, soldering iron, 6 ft. hose and tank connections	32
3/16", 3/16", 1/2"	Hex nut adjusters. Has holes for re-rounding tubing	105-F
3/16", 3/16", 1/2", and 5/8"	For joining tubing without fittings. Kit includes flaring bar, 4 swedging tools, packed in steel case	195-S
3/16" to 3/4"	Individual swedging tools—no bar	93-S
1/16" to 1 1/16"	For reaming both inside and outside edges of tubing	208-F
3/16" to 3/4"	Tool for refacing S. A. E. flare seats which have become nicked or marred. Includes cutter, 5 adapters	98-F

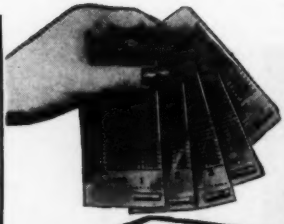
THE IMPERIAL BRASS MFG. CO., 534 S. Racine Ave., Chicago 7, Ill.

IMPERIAL

FITTINGS • VALVES • DEHYDRATORS
FILTERS • FLOATS • CHARGING LINES
TOOLS FOR CUTTING, FLARING, BENDING,
COILING, PINCH-OFF AND SWEDGING


To Meet Your
Refrigeration needs
Artic
REG U.S. PAT OFF
DU PONT
METHYL

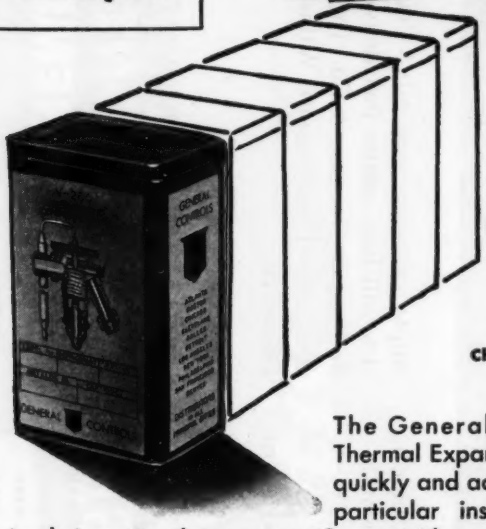
Interchangeable Orifice Cartridges Permit Proper Sizing *on the job!*



GENERAL CONTROLS

V-200

THERMAL EXPANSION VALVE



For Freon Methyl Chloride Sulphur Dioxide

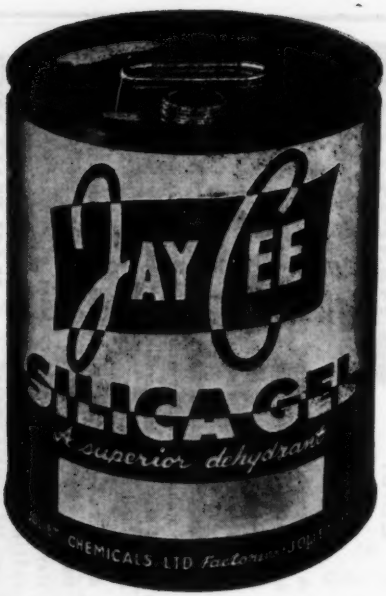
The General Controls V-200 Thermal Expansion Valve can be quickly and accurately sized to a particular installation load by simply inserting the proper orifice cartridge on the job. This eliminates the costly necessity of carrying a large stock of complete valves of different capacities.

The unsurpassed sensitivity and dependability of this valve is achieved, in part, by a diaphragm of adequate area, the well-balanced, low-rate adjusting spring, the full-opening, tight-closing valve ball. Forged brass casting prevents costly refrigerant leaks. Corrosion resistant internal and external parts for prolonged life. Operates in any position and is not affected by ambient temperature.

For complete specifications on the V-200 and other refrigerant controls, write the nearest Factory Branch, Distributor, or direct to

GENERAL CONTROLS
801 ALLEN AVENUE GLENDALE 1, CALIF.

Factory Branches: Philadelphia, Atlanta, Boston, Chicago, Kansas City, New York, Dallas, Denver, Detroit, Cleveland, Houston, San Francisco, Seattle, Pittsburgh. *Distributors in Principal Cities*



25 lb. pail illustrated.

The Ideal Dehydrant for Refrigerants

JAY CEE refrigeration gel is one of the most efficient dehydrating agents. It is especially prepared for dehydration of refrigerants, and may confidently be used for drying Freon, Methyl Chloride, Sulfur Dioxide or any other similar agent. Removes acids, prevents rust or corrosion and is not effected by oil. The special particle size retains its crystalline structure—assuring uniform distribution in the cartridge and complete contact with all pore surface areas.

We offer you this economical 25-lb. container with resealable Easy-Pour spout. Dehydrators can easily be filled from this Easy-Pour container, and resealed to protect unused contents until needed. Special gasketed cover makes Easy-Pour container air-tight when not in use.

There are excellent opportunities for jobbers and distributors to develop profitable business on Jay Cee Silica Gel in a few territories. Write for details.

JOLIET CHEMICALS, LTD., INDUSTRY AVENUE, JOLIET, ILLINOIS

JAY CEE **SILICA GEL**

A superior dehydrant

Eliminating the fantasies and accentuating the facts, what can you really expect in the post-war tomorrow?

The new Mills ⅓ H.P. Direct Drive Compressor is one After-V-E-Day development we can describe with certainty. It is almost 50% lighter than present belted units, more than 50% smaller. It operates at 1750 revolutions per minute. It delivers hermetic-type performance, but is repairable in the field. It has 14 superiorities to make it 14 ways better than conventional open-design compressors.

These are facts whose advantages you will appreciate when you can install Mills Direct Drive Compressors in your cabinets. We wish more of you could enjoy them at once. Unfortunately, it will be several months before the first units come off our production lines, and then quantities will necessarily be limited. Only a very few manufacturers can be accommodated in the first year of fabrication.

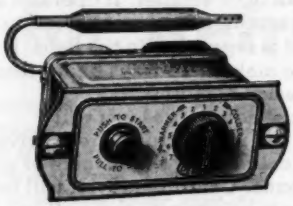
However, this engineering achievement is a signpost to Mills developments for tomorrow. It points toward things to come. Your own plans for the future wisely can be integrated with this and other accomplishments of Mills Engineering.

MILLS INDUSTRIES, INCORPORATED

4100 FULLERTON AVENUE, CHICAGO 39, ILLINOIS

Just a Minute, Joe!

Before you start turning the atmosphere blue, get in touch with your Ranco Jobber. He can recommend a precision Ranco Control to fit any replacement job. The full line may not be available for some time, but we are bending every effort to see that you will soon be able to obtain the exact control for every purpose.



For General or Exact Replacement. Replaces controls on Grunow and Mohawk Refrigerators. Equipped with overload coil.

Ranco engineering and Ranco research has not paused for a moment during the war years. You may look confidently to Ranco for refinements and improvements that will make your business even better during the post-war period.

★ ★ ★ ★ ★ ★ ***Ranco Inc.***

COLUMBUS 1, OHIO

THE REFRIGERATION SERVICE ENGINEER

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Vol. 13 OCTOBER, 1945 No. 10

Contents

IN THIS ISSUE—

In the third "guest editorial" appearing on page 28, E. H. Sommer in charge of Philco Service for Philco Corporation, tells of their service organization and the training program set up for it.

Continuing with the series of articles on Airtemp Conditioners on page 25, this issue completes the description of the system and its component parts and clears the way for adjustment instructions in the next issue.

A round-up of some of the home and farm freezers soon to be available in quantity is contained on pages 29 to 34. Models to be manufactured together with their specifications provides advance information for those who have not yet received their display models.

If the current wave of strikes and delays in reconversion are getting you down, read the encouraging reports on pages 36 to 39 and take heart again. According to one commentator our troubles are nothing more than a skin disease requiring a little teamwork in a successful treatment.

Some worthwhile service experiences and helpful hints are contained on pages 40 and 41. Among them are suggestions on motor repairing, Graybar refrigerator compressor leaks and one unusual cause of stuck-up compressors.

The ever interesting Question Box starting on page 42 again offers solutions to the specific problems of readers.

The new Detroit code governing installation and service of air conditioning and refrigerating equipment went into effect September 27. A few of its most interesting requirements are contained on page 52.

Under new and improved devices on pages 60 and 62 is a description of a few post-war items now available for the market.

Publication of this issue of THE REFRIGERATION SERVICE ENGINEER has been unavoidably delayed because of a strike of Chicago compositors just as it was going to press. We sincerely regret this unusual delay but the situation has been entirely out of our control.

As the industry gears for all out production of civilian goods and as men from the armed forces are released to return to industry, there is a general shuffle of personnel to fill up the gaps created by war and to rebuild organizations. All this is reflected in the manufacturers announcements beginning on page 78.

THE COVER

Another indication that the refrigeration industry is becoming big business as it once more starts rolling is the new and spacious quarters recently occupied by Hinshaw Supply Co., San Francisco, California, and pictured on the front cover.

R. L. Hinshaw in his new and spacious office.

Experience has shown the company that increasing larger inventories must be carried each year to take care of the larger volume of business and greater demands of customers making it necessary to obtain larger quarters. "Now that the postwar period is here," states Mr. R. L. Hinshaw, "we are endeavoring to gear our facilities to meet the peacetime demand for all types of refrigerating equipment."

The company entered the refrigeration jobbing business about 12 years ago in Sacramento, opening a San Francisco warehouse six years ago. The new building was purchased last January and remodeled to house their main offices and warehouse.

HENRY WING CAP VALVES

Have This Patented Rotating Self-Aligning Stem Disc

NON-FERROUS ALLOY GLOBE VALVE WITH SOLDER CONNECTIONS

Available also in Semi-Steel with Companion Flanges, Sleeves, Bolts and Gaskets as well as in Semi-Steel with Pipe Thread Connections

SIMPLE, EFFECTIVE DESIGN

1. Valve Stem.
2. Stem packing set.
3. Spring — this provides proper cushion between valve stem and stem disc making disc self-aligning and chatterproof.
4. Spring Retaining Ring holds steel locking pins in position.
5. Steel Locking Pins. These enter side groove in stem disc and corresponding groove in valve stem.
6. Replaceable Rotating Stem Disc has soft, metal alloy insert which makes contact with seat in valve body.

* Wing Cap Has Socket to Engage Valve Stem for Opening and Closing Valve

YOU can expect longer service through easier closing action from Henry Wing Cap Valves as a study of the exploded view of the valve stem assembly will prove. The rotatable stem disc has an alloy metal seating surface and is replaceable. This surface makes instant contact with the valve seat, thus disc wear is held to a minimum. Further closing action presses the stem disc onto the seat overcoming any distortion of the alloy metal.

Henry Wing Cap Valves are backseating — packing rings and cones are self nesting requiring a minimum of compression to establish a seal around valve stem and stuffing box wall. Developed especially for Freon and Methyl Chloride, they assure long life. Added protection against leaks is provided by the gasketed joint between the wing cap and the valve bonnet. Long stem travel and full capacity passages assure unrestricted flow.

Write for Henry Catalogs describing these valves as well as other Henry Products.

Sold Through Jobbers

HENRY VALVE COMPANY
3260 WEST GRAND AVENUE, CHICAGO 51, ILLINOIS

PACKLESS AND PACKED VALVES • STRAINERS • DRYERS FOR REFRIGERATION AND AIR CONDITIONING AMMONIA VALVES • FORGED STEEL VALVES AND FITTINGS FOR OIL, STEAM AND OTHER FLUIDS

Each month a national service manager of a well known refrigeration organization will address the readers of The Refrigeration Service Engineer on a subject of timely interest.

This Month's GUEST EDITOR

E. H. SOMMER, *In Charge*
PHILCO SERVICE, PHILCO CORPORATION

Service Behind The Serviceman

MOST MANUFACTURERS have postwar plans, but few, while still providing material and equipment for the Armed Forces, have plans which will help dealers and independent servicemen right now.

Philco is fully aware of postwar possibilities and probabilities. Philco knows that in refrigeration, air conditioning, radio, television, and other appliances, service is a most important partner with engineering, production, advertising, and merchandising. Consequently Philco Service is active now and growing fast. Philco Service is a world-wide association of appliance servicemen, organized for the benefit of servicemen and with the aim of providing the best possible service to users of Philco products. The Philco Service Division, of which Philco Service is a part, has a large organization working right now—but let us give you the full story.

What was the greatest kick you had while watching a championship team in action? The perfection of the smooth team-work—every position doing its job in the well-ordered overall plan — championship performance!

Philco Service is playing a key position on the Philco Team. Every member of the organization understands the necessity of providing prompt, capable, and efficient repairs—service for Philco appliances. Naturally such a team position cannot be filled without training. Training in the basic instruction for the position, gradually working into training for cooperative action with the rest of the team. Remember Knute Rockne's Notre Dame teams? Interchangeable all the way around—any backfield group would work perfectly with any line group —even individual players were trained to work perfectly in any team group.

In the same fashion Philco Service is training the distributor and dealer servicemen, as well as selected independent servicemen, so they can keep Philco products in good operating condition. Before explaining these training plans let us look at the record.

Record of Experience

During the past three years the Training and Installation Division trained more than 15,000 technicians for the Armed Services. Advanced training was given more than 500 Philco Service Engineers who are now on active duty with the United Nations. The experience of twelve straight years of leadership in merchandising over 18,000,000 radios, refrigerators, and air conditioners also contributes its share to the store of knowledge. This experience qualifies Philco to coach the members of Philco Service.

The organization is as complete as the best head coach would want; for instance,

1. A service manager for each Philco product, refrigerators, home radios, auto radios, air conditioners, etc., is in active service now. Mr. Edwin C. Barth, Manager, Refrigerator Service, and Mr. Joseph W. Flinn, Manager, Air Conditioner Service, bring to their respective positions a wealth of experience from long and successful duties in field service and training servicemen. No other duties divert their attention from the problems of service in their specialties.

Field Service Engineers to Help

2. Supporting the work and direction of these managers is a rapidly expanding force of field service engineers. Each word of this title is full of meaning. They are, each one of them, most capable technicians; they are constantly in the field with distributors and dealers, and service is their sole purpose; discussing and helping with day-to-day problems, holding meetings for instruction of service men, returning often to headquarters to report findings and obtain latest information. For instance, as this is being written, a schedule has just been posted at headquarters providing for trips to 80 cities by Philco men, covering a three-week period, and this is only part of the traveling schedule.

3. Model service shops at Philco Service Headquarters for each product where service problem analysis can be obtained. These operate in close cooperation with the manufacturing departments.

4. A publications department with 12 years experience in preparing service information and, during the war, producing completely understandable service information for the Armed Forces on all types of electronic equipment. An important department, we will give you more on it later.

5. Product specialist engineers, resident at the many plants producing Philco appliances, and who are available on a moments notice to go into any territory encountering special service emergencies. This group will assist the engineering and production departments of their particular plants to overcome such emergencies with fast and comprehensive factory action.

How does that look for a coaching staff? And that is only the beginning!

Let us look at the plans.

1. Headquarters operations under the individual managers will be characterized by prompt, complete, and authoritative help to the serviceman. For instance, headquarters is in direct teletypewriter communication with the Philco refrigerator super power unit plant. It takes only several hours for replacement units to be shipped to a Philco Distributor after receiving his order. Warranty claims on small parts are handled promptly by a special section.

2. The technicians in the model service shops are also teachers in the best sense of that word. In addition to showing distributors' service managers, dealers, dealer servicemen, and independent servicemen the business operation of the shops, the technicians are capable teachers of efficient servicing methods. Ideas of shop practice are worked out under actual operating conditions as they would be in the field.

3. The publications department produces users instruction pamphlets, service bulletins on individual models of appliances, general service bulletins, notes, and manuals on specific phases of servicing. For instance, Philco-York air conditioner bulletin No. 3, "Protection and Correction for Rust & Corrosion," is a 19-page manual covering the subject completely, even to the rebuilding of the unit.

The department is complete with writers, draftsmen, layout men, photographers, and printers.

4. Instruction of distributor's and dealer's servicemen, as well as independent servicemen, will be given by field service engineers at meetings called by the Philco distributors. These meetings will be coordinated with the instruction meetings held by the distributor's service managers.

Continual Training Provided

Complete training courses for dealers and independent servicemen to be used by distributors' service managers will be a long pull, not a one-shot proposition. Instruction to be given by the field service engineers in their meetings will supplement both the training course manuals and the regular issue service bulletins and manuals mentioned in the paragraph above.

Mailings of timely bulletins and manuals from headquarters will be made direct to Philco Service members. For instance, when the first postwar appliance is put in a customer's home, the serviceman will already have in his possession the service bulletin on that appliance.

(Continued on page 50)

Installation and operation of (Article Two)

Airtemp Conditioners

Blower Assembly

OIL the blower motor at both bearings as shown at 7, Fig. 8, with a good grade of electric motor oil.

Grease the blower bearings, shown 9 and 10. CAUTION—A special grease must be used on the 5 hp. units. This grease is specified as and is available under Airtemp Part No. 1021859.

The 3 hp. units require oil instead of grease for the blower bearings. Use a good grade of SAE 20 oil during the cooling season. If a steam coil is used during the winter months, use SAE 30 oil for winter operation.

See that the blower belt is just tight enough that it does not slip when the motor starts. The motor pulley is adjustable. When the flanges are brought together, it causes the belt to ride high in the sheave and increases blower speed. At maximum speed the blower on the 5 hp. unit delivers approximately 1980 c.f.m. and the blower on the 3 hp. unit delivers approximately 1200 c.f.m. when equipped with standard plenum chamber and grille.

The motor is of special splashproof construction and is protected by an internal overload device which will stop and start the blower automatically until the cause of external heat or overload is determined and corrected. NOTE—On 440 volt motors the overload switch is external and attached to the panel board. This is not an automatic switch and requires manual reset, if the motor is subject to overload.

Water Valve

This is a pilot-operated valve. The Freon pressure bellows opens the small pilot orifice and water pressure then opens the main valve. An arrow stamped on the valve body indicates the direction of water flow through the valve.

To adjust, turn the adjusting nut clockwise to open the valve and counterclockwise to close it.

Cooling Tower

If a cooling tower is used, remove the water valve. Remove the high pressure tubing from the connection on the discharge line. Plug the fitting on the discharge line. NOTE—This fitting will not be available on some of the units. If not, carefully coil the tubing and plug the flare nut. The plug must be tight and the joint on the discharge line must not be broken.

When a cooling tower application is made, the Freon stop-valves should remain closed until the water valve and pressure tubing have been removed. The unit is shipped with the system evacuated, and by following the above plan no Freon will be lost and it will not be necessary to pump down the system.

This is the second of a series of articles published by permission of Airtemp Division, Chrysler Corporation on the package conditioners for stores and residences. Service instructions and detailed descriptions of the mechanical and electrical parts are presented for the benefit of those who are called on to service these units in the field.

Water Circulation

On the 5 hp. units, the entering water passes through the water valve into the header on the bottom of the condenser. This header divides the flow, shunting half of the water into the outside, or largest condenser coil, and then passes directly to the common outlet. The other half of the supply water is taken through a smaller, inside coil and is carried to a coil in the compressor crankcase where it is used to cool the oil. From the compressor crankcase, it returns to the outlet piping.

The pressure drop through the oil cooler and inner condenser coil is carefully calculated to coincide with the pressure drop through the large condenser coil. There can be no lack of circulation through this system.

On the 8 hp. units, the entering water passes through the water valve into the header on the bottom of the condenser. The supply water is taken through the condenser, then carried to a coil in the compressor crankcase where it is used to cool the oil. From the compressor crankcase, it returns to the outlet piping.

Wiring

Inspect the compressor nameplate to see that the electrical characteristics of the compressor motor correspond to the current available on the premises.

Bring the power leads into the junction box, 16, and make the connections. Solder and tape all connections.

The internal line and low voltage circuits are factory made and should not be changed. See Wiring Diagram, Fig. 4 or 5, depending on the model number being connected.

NOTE—Wire and fuse sizes must conform to local codes and ordinances or the National Electric Code. A separate fused disconnect switch should be installed on an existing panel or in a location most convenient to those responsible for the operation of the unit.

Remove the rubber band from the relay on the control panel.

NOTE—If this unit should be TEMPORARILY connected to supply and return water with RUBBER HOSE, then the frame of the unit must be connected to an adequate ground. Use No 10 solid wire; insulated; color, preferably white.

Thermostat

A low voltage room thermostat is available, if desired, and carried under Airtemp Part No. 1020067. Connect the thermostat leads as shown in the note on the wiring diagram, Fig. 4 or 5. When a room thermostat is used, turn the temperature control

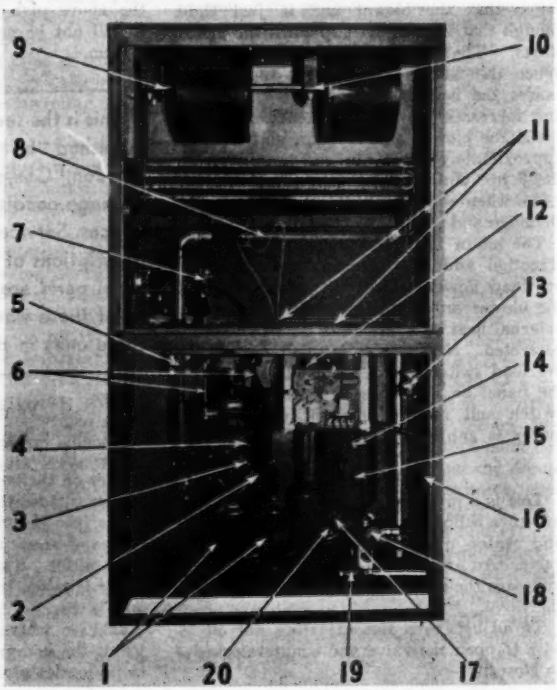


Fig. 3. Descriptive photograph showing location of the parts referred to in the text.

1. Shipping bolts
2. Discharge gauge connection
3. Suction gauge connection
4. Oil pressure gauge connection
5. Suction line flange
6. Shipping bolts
7. Fan motor oil cup
8. Thermostat bulb
9-10. Blower bearings
11. Drain pan bolts
12. Discharge shut-off valve
13. Expansion valve
14. Relief valve
15. "Snifter" valve
16. Electrical junction box
17. Charging connection
18-19. Water inlet and outlet
20. Liquid shut-off valve

on the panel board to "colder," as far as it will go.

Compressor

The conditioner is shipped with the discharge shut-off valve, 12, and the liquid shut-off valve, 20, closed. The charge of Freon is locked in the condenser. To open the liquid shut-off valve, remove the seal cap, loosen the packing gland and turn the stem COUNTERCLOCKWISE as far as it will go without forcing. To open the discharge valve, remove the seal cap, loosen the packing gland, turn the stem CLOCKWISE as far as it will go without forcing. Tighten the packing glands and replace the seal caps. NOTE—If the valve stems seem tight, tap the stems lightly to loosen them.

Turn the switch to the position on the control plate marked "Fan," wait several seconds until the fan motor is operating at full speed, then turn the switch to "Cooling" and the compressor will start.

Expansion Valve

The expansion valve is shown at 13. A distributor header and equalizer are used to improve coil efficiency. This expansion valve has an external adjustment, but will be factory set in the "wide open" position, or for maximum flow, at which point the superheat reading averages 12 to 13 degrees F., which is normal. Closing the expansion valve increases superheat and reduces coil efficiency.

Some models have the expansion valve located in the upper section.

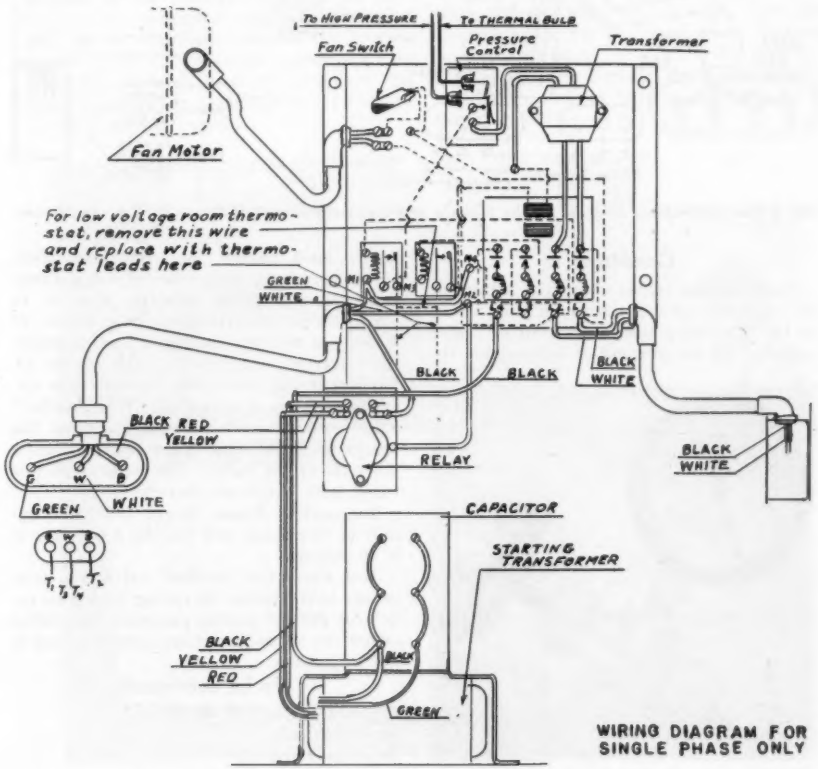


Fig. 4. Electrical wiring diagram for the single phase, model 3-SCD conditioner.

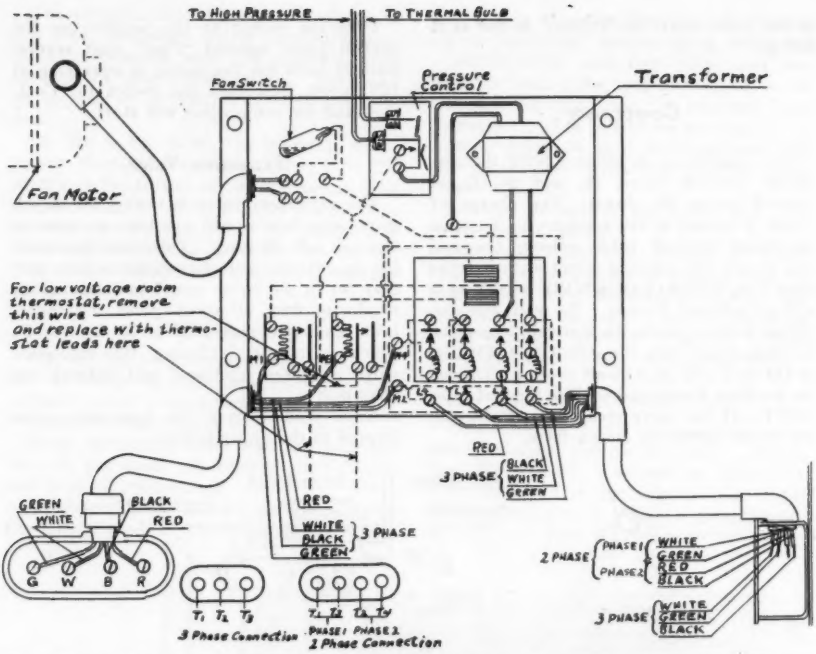


Fig. 5. Electrical wiring diagram for the 2-phase and 3-phase models 3-SCD and 5-SCA conditioner.

Condenser

Eight or nine inches above the bottom of the condenser shell is a hexagon plug, shown as 15. This plug conceals a "snifter" valve installed for the purpose of determining the liquid level inside the condenser shell. With the hexagon plug removed, use a standard Airtemp gauge adapter, Fig. 6, to loosen the small herringbone plug inside. If Freon gas escapes, the liquid level is below the "snifter" valve AND THIS IS AS IT SHOULD BE, providing the unit is in operation. If liquid sprays out of the "snifter" valve with the unit in operation, bleed the charge until the liquid is level with or below the level of the valve. The purpose of this valve is to avoid an over-charge.

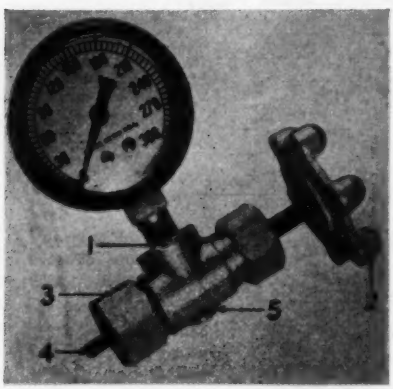


Fig. 6. The charging valve and gauge assembly.

The correct Freon charge for the 5 hp. unit is 18 pounds and for the 3 hp. unit it is 16 pounds.

Just above the "snifter" valve is a condenser relief valve, 14, spring loaded to relieve at 220-240 pounds pressure. This valve cannot be opened or closed manually and is not adjustable.

(To be continued)

M. T. Johnson,
Franklin Park, Ill.

The bound copies of your paper are the best section of my library.

Home and Farm Freezers
Ready for Expanded Market

MANY sales and service organizations have reported a lively interest by their customers in home and farm freezer cabinets and the customer interest has turned the attention of the sales-minded service men toward the possibilities of merchandising these cabinets.

The postwar period for the freezer cabinet makers has now arrived. That time to book those interested customers is here! Cabinets are on the market in sufficient number and variety for display purposes and to meet the demands of a few of those interested. Because of the interest shown in the cabinets by the public and in turn by the sales and service organizations, and to provide specifications and practical information on what cabinets are available, many of the leading models are described and illustrated on the following pages.

Sanitary Quicfrez Farm Freezer

The combination of a refrigerator in the kitchen and a freezer in the basement is a program which the Sanitary Refrigerator Co., Fond du Lac, Wis., expects to be helpful to the dealer. Prior to the war, farm freezers were one of this company's major lines and plans are now under way to build them in substantial quantities.

Typical of the Sanitary Freezer line is Model 1244, illustrated below with 12.5 cubic feet capacity.

Specifications of a smaller domestic freezer, Model 844, are as follows: 67½ in. long, 28¼ in. wide, 36½ in. high. Total net capacity, 8.5 cu. ft., total quick freezing capacity 2.5 cu. ft.

These models include a separate cooling unit 20 in. wide by 25¼ in. deep and 30 in. high.

Sanitary Quicfrez Model 1244: 28¼" wide, 81½" long, 36½" high, freezing compartment volume 2.5 cu. ft., storage compartment volume 12.5 cu. ft.

Portable Freez-All Home Freezers

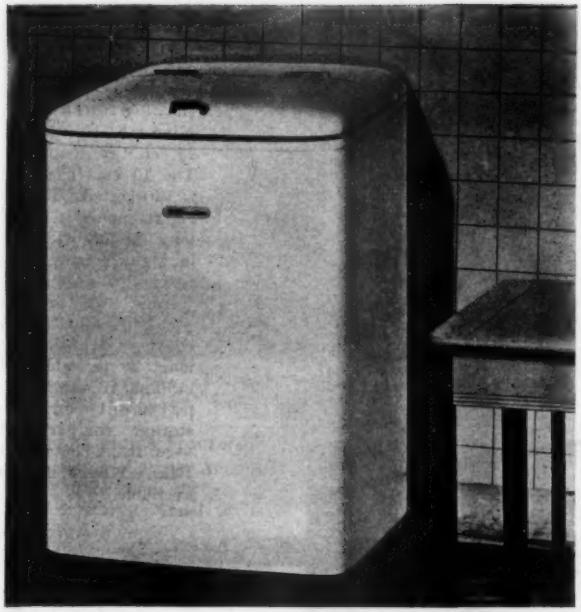
The Freez-All Line of home freezers made by the Portable Elevator Mfg. Co., Bloomington, Ill., consists of three models, a chest and two upright drawer models. Illustrated is the smaller upright model with three drawers.

Portable Modal 80: 29" wide, 63" high, 34" depth, freezing compartment volume 2.15 cu. ft., Storage Compartment Volume 6.5 cu. ft.

Harderfreez Home and Farm Locker

The Harderfreez line will be manufactured by the Tyler Fixture Corp., Niles, Mich. There are three models. In addition to the chest, illustrated, there will be two upright models which resemble a regular refrigerator, but will have a capacity of 18 cu. ft. One will be for all frozen foods with processing compartment, and the other will be a dual purpose refrigerator with 9 cu. ft. of frozen food storage and 9 cu. ft. of normal temperature storage.

Harderfreez Model: 58" long, 28" deep, 34" high, exclusive of compressor compartment, storage compartment volume 12 cu. ft.



I.C.A. Koldmaster Home Freezer

The Ice Cooling Appliance Corp., Chicago, Ill., has introduced a new model home freezer with specifications as follows: cabinet dimensions 28¾ in. wide, 25 in. deep, 39¾ in. high at back, 37 in. high at front. The overall height includes a 1¾ in. base. The storage compartment is 20¾ in. wide and 17 in. with an opening 20¾ x12½ in. The unit is thermostatically controlled, equipped with a thermostatic expansion valve easily reached.

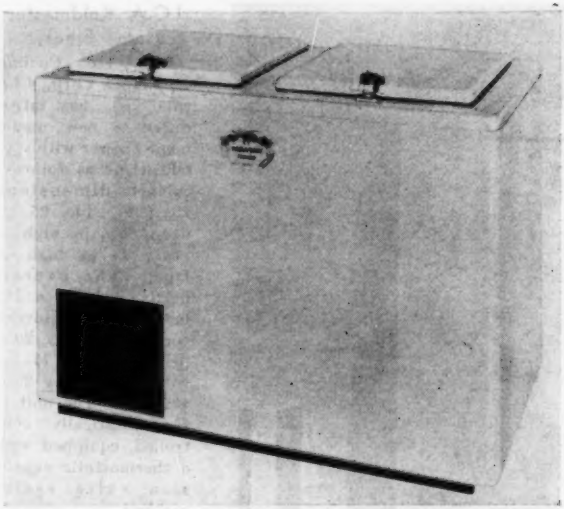
Koldmaster Home Freezer: 28¾" wide, 39¾" high, 25" depth, storage compartment volume 4 cu. ft.

Weber Roll-A-Door Cabinet

Two Roll-A-Door models of household frozen food cabinets of approximately 4½ and 7 cubic feet storage capacity, are announced by Weber Showcase & Fixture Co., Inc., of Los Angeles, Calif. The smaller model is illustrated.

Specifications are as follows: Model H455, 4.5 cu. ft. capacity, length 36 in., width 28⅝ in., height 36 in.; Model H705, 7 cu. ft. capacity, length 46 in., width 28⅝ in., height 36 in.

Weber Model H455: 28⅝" wide, 36" long, 36" high, storage compartment volume 4.5 cu. ft.



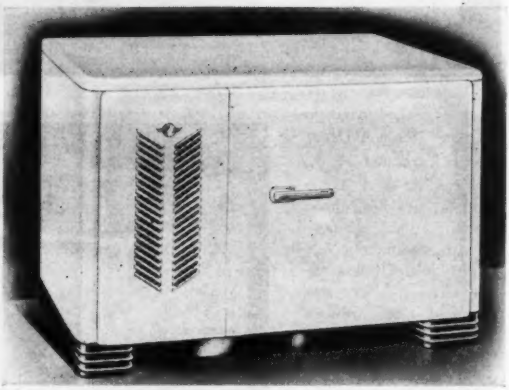
Pak-A-Way (Schaefer) Home Freezer Model 10: 51" long, 28" wide, 36" high. Total capacity 10 cu. ft.

Pak-A-Way Freezers

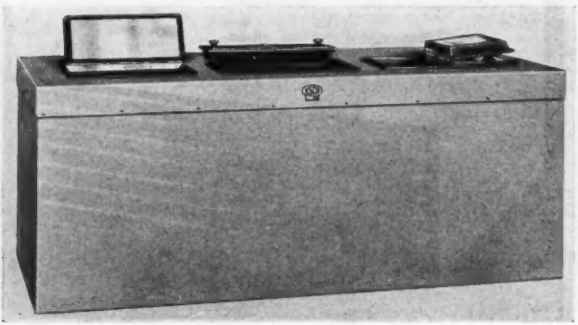
Five models of home and farm freezers are made by Schaefer, Inc., Minneapolis, Minn.: 6, 10, 15 and 25 cu. ft. capacity. The 10 cu. ft. model is illustrated. The 15 cu. ft. model is 69 in. long, 28 in. wide, 36 in. high, freezing compartment — cu. ft., storage compartment —cu. ft.; and the 25 cu. ft. model is 103 in. long, 28 in. wide, 36 in. high, freezing compartment—cu. ft., storage compartment —cu. ft. A new model Pak-A-Way 5 is also available.

Wilson Home Freezer

The Wilson Cabinet Co., Smyrna, Del., has two models of home freezers available, the Lo-Boy with 5.6 cu. ft. capacity and the Hi-Boy with 6.3 net cu. ft. capacity. The Lo-Boy is illustrated, with specifications. The Hi-Boy is 58 in. high, 30 in. wide, and $29\frac{5}{32}$ in. deep.



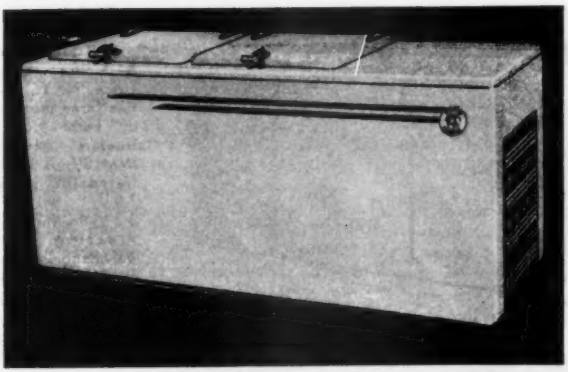
Wilson Lo-Boy Home Freezer: 51" wide, 24" deep, 36" high. Total capacity 5.6 cu. ft.



Esco Cabinets

Four models are made by the Esco Cabinet Co., West Chester, Pa. Model FTD-24 is illustrated. Other models are FTD-16, 66½ in. long; FTD-32, 114½ in. long, FTD-40, 188½ in. long.

Esco Farm Freezer Model FTD-24: 90½" long, 35½" wide, 31½" high. Freezing compartment 8 cu. ft. Storage compartment 16 cu. ft.



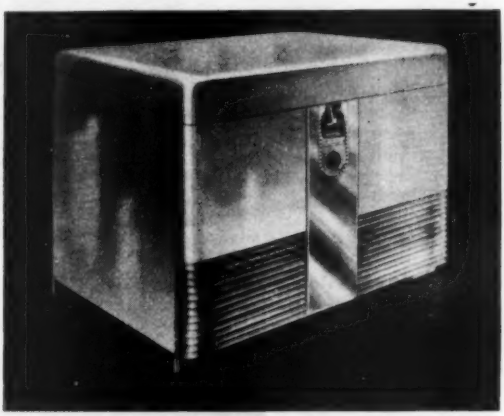
Refrigeration Corp. of America Frigid-Freeze Model 700: 74⅝" long, 29¾" wide, 33⅜" high, 14 cu. ft. capacity.

Frigid-Freeze

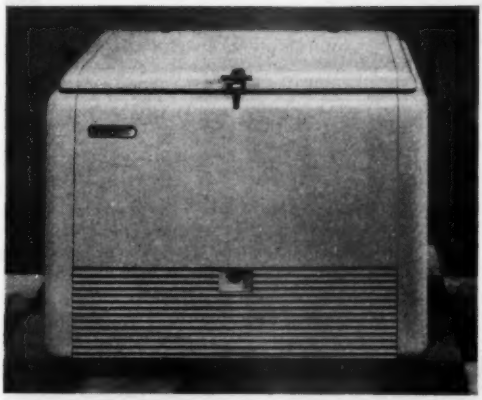
The Refrigeration Corp. of America offers four models of frozen food cabinets for the home. Model 700, Model 300, with 6 cu. ft. capacity, is 49⅛ in. long, 29¾ in. wide, 33⅜ in. high; Model 500, with 10 cu. ft. capacity, is 62½ in. long, 29¾ in. wide, 33⅜ in. high; Model 1000, with 20 cu. ft. capacity, is 98⅞ in. long, 29¾ in. wide, 33⅜ in. high.

Amana Home Freezers

The Amana Society, Amana, Iowa, offers three models of home freezers. Model 90 is illustrated. Model 50 a smaller cabinet, has 5 cu. ft. capacity. Model 200, a new unit, is described as a complete private frozen food locker plant. It has a 28 cu. ft. quick freeze and storage compartment and a walk-in cooler space of 100 cu. ft., designed for a temperature of 36-40° F. It is 8 ft. long, 4 ft. deep, 6 ft. 10 in. high.



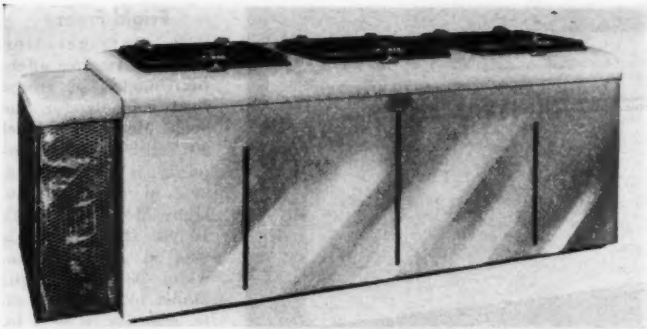
Amana Home Freezer Model 90: 47" long, 27" wide, 9 cu. ft. capacity.



Ben-Hur Freezers

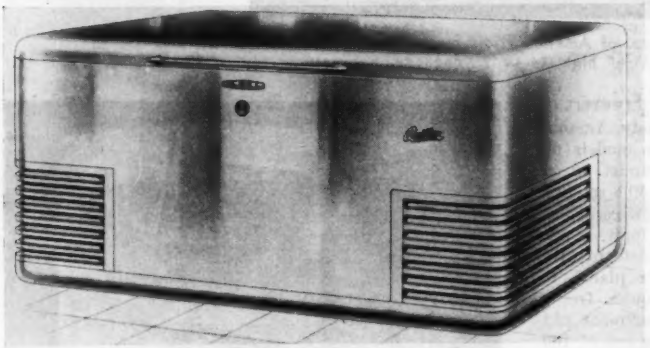
The Ben-Hur Manufacturing Co., Milwaukee, Wis., has two farm and home freezer models ready for distribution. The 6 cu. ft. model is illustrated. The 12 cu. ft. model is 68 in. long, 28½ in. wide, 36 in. high, freezing compartment 2 cu. ft., storage compartment 10 cu. ft. Both models are designed with two temperature zones. In process of design is a three temperature vertical model.

Ben-Hur Home Freezer 6 cu. ft. Model: 48" long, 28½" wide, 36" high. Freezing compartment 2 cu. ft. Storage compartment 4 cu. ft.



Steinhorst

Emil Steinhorst & Sons, Inc., Utica, N. Y., offers three models of Farm-Home freezers. Model WM18½ is illustrated: 102" long, 30½" wide, 32½" high. Freezing compartment 4½ cu. ft. Storage compartment 14 cu. ft.



Quillen

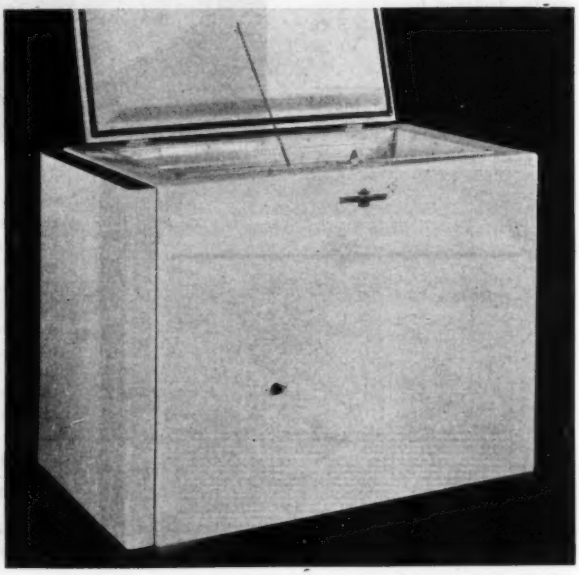
The Quillen Brothers Refrigerator Co., Indianapolis, Ind., has two models of farm and home freezers available. Model 16 is illustrated: 78" long, 28½" wide, 34" high, 16 cu. ft. capacity. Freezing space 2¼ cu. ft.

Coolerator

Two models of farm and home freezers are made by the Coolerator Co., Duluth, Minn.; home freezer model F-65, illustrated, and farm freezer model F-155.

Specifications of Farm Freezer model F-155 are: 30⅜ in. wide, 72 in. long, 38 in. high. Total volume 15.10 cu. ft.; freezing compartment volume 1.82 cu. ft., storage compartment volume 13.28 cu. ft.

Coolerator Model F-65: 28⅜" wide, 47" long, 37⅜" high, freezing compartment volume 1.53 cu. ft., storage compartment volume 5.05 cu. ft.



SERVICE ENGINEERS NEEDED ON ARMY VESSELS

THE Transportation Corps of the War Department is in urgent need of maintenance and repair men for refrigeration equipment to serve as Refrigerator Engineers on Army vessels operating in the Pacific Theater.

The per annum salary for this position in the above named theater is $2550. In addition to base salary, subsistence and quarters will be furnished at government expense and individuals appointed to the position will be entitled to maritime bonuses applicable to the theater in which serving. Under current Maritime War Emergency Board decisions, as adopted by the War Department, this represents an additional increase of $2.50 per day for each day of service in the area plus a $125 vessel attack bonus, as may be applicable. Individuals appointed to these positions will be further entitled to $5,000 war risk benefits, free of premium, for loss of life or disability, $200 for loss of personal effects plus reimbursement for loss of professional equipment not to exceed a maximum additional $200. Medical care and hospitalization for illness and for injury sustained in the performance of duty will also be provided at government expense.

In addition to the aforementioned maritime benefits to which personnel will be entitled, such personnel will be entitled to rights, privileges and benefits applicable to Federal Civil Service employees. Such rights, privileges and benefits encompass sick and annual leave, benefits of the United States Employees Compensation Act for injuries sustained while in the performance of duty and also Civil Service retirement benefits.

Apply at Ports of Embarkation

Boston Port of Embarkation, Essex Building, Boston 10, Massachusetts.

Hampton Roads Port of Embarkation, Norfolk Army Base, Norfolk, Virginia.

Los Angeles Port of Embarkation, Wilmington, California.

New Orleans Port of Embarkation, Poland and Dauphine Streets, New Orleans 12, Louisiana.

New York Port of Embarkation, 1st Ave. & 58th Street, Brooklyn 9, New York.

San Francisco Port of Embarkation, Fort Mason, California.

Seattle Port of Embarkation, 1519 South Alaskan Way, Seattle 4, Washington.

BOOK REVIEW

DRAKE'S HEATING, COOLING AND AIR CONDITIONING HANDBOOK. By Harold P. Manly. Published by Frederick J. Drake & Co., Chicago, Ill. 700 pages, 64 tables and charts, 350 illustrations. Price $4.00. For sale by Nickerson & Collins Co., Chicago, Ill.

This new handbook is a practical working manual combined with an elementary instruction book. It is assumed that those using the handbook have had a limited or no previous acquaintance with heating, cooling or air conditioning in either principles or practice. It is assumed further that they are interested primarily in the selection, installation, and operation of standard types of equipment, and that they wish to resort to no more "mathematics" than absolutely necessary.

The purpose of the handbook is to enable anyone with ordinary mechanical ability to do six things.

1. To correctly measure or compute the "loads" to be handled in heating, cooling, or all-year air conditioning of any residence, small apartment building, commercial establishment, or other place of moderate size.

2. To determine the capacities and sizes of all the parts, both large and small, which will be needed to assemble a system which will handle the loads.

3. To plan the installation of these parts in accordance with accepted good practice, with due regard to safety and continued satisfactory performance, and with the maximum economy permitted by existing conditions.

4. To make the actual installation in a workmanlike manner.

5. To make all settings and adjustments which are necessary when placing the equipment in operation; using, where required, the standard tests usually employed for such work.

6. To locate the causes for troubles, and to apply the needed remedies when faults develop.

To sum up, Drake's Heating, Cooling and Air Conditioning Handbook is a book that tells first how to do it, and then why to do it that way.

* * *

Charles Regan,
Central Falls, R. I.

Enclosed two dollars cash for which please send me THE REFRIGERATION SERVICE ENGINEER for another year. I could remark that the only thing the matter with the Service Engineer is that I don't get it often enough.

The Industry

The war is over! The first flush of victory is slowly wearing off and we are now in the throws of a great reconversion struggle. Attendant to this struggle are the frequent doubts and fears of what the future holds, the disappointments caused by delay and confusion, the impatience to get going. Added to all of this is the recent wave of strikes which threaten to cause further delay and more confusion in our efforts at reconversion. If you are

RECONVERSION AND JOBS

IN THE first flush of victory, all of us rejoiced at the blessings restored by peace—the return of our sons, the resumption of normal living conditions, the reappearance of the comforts and conveniences we had given up for the duration. At the same time, the national thanksgiving seems to have been tempered somewhat by a certain current of dread; of misgivings about the future. Words like "cutback" and "cancellation" and "reconversion" are mentioned in the papers and in conversation with something like fear, despite the obvious fact that for nearly five years we have been paying a high cost in men and treasure for the very privilege of seeing reconversion become a reality.

I see nothing in reconversion that our economic system cannot take in its stride. Those with confidence in and knowledge of the American people know it can be accomplished. Five years ago, we went through another period of reconversion. It was one in which the problems were just as critical and the stakes at least as high as those involved today. How well the American system answered that challenge has become well known in such remote outposts as Berlin and Tokyo.

There is little doubt that we are passing through an interval of extraordinary readjustment, both industrial and personal. That is part of the price of victory. It is certain that the need for tanks and bombers has passed, and those who worked so effectively and well to produce them find themselves no longer engaged. Let's face it: there *is* a certain amount of transitional unemployment today. Probably within the next few months there will be more, as the nation shifts from war to peacetime production.

The economic danger I see is not interim unemployment. The danger lies in not recognizing this temporary, frictional condition for what it is—the inevitable result of an abrupt change of direction. I put it this way: In assaying the health of our economic system, let's not diagnose its trouble as cancer when really it is only like turning over in bed.

I feel that if we should mistakenly identify today's unemployment, not as the symtom of change, but of disease, we run the risk of turning a temporary problem into a permanent problem.

Teamwork Will Do It

Why was the mobilization for war production achieved without serious trouble? It was because we had a common objective and a common sense of urgency. There was never a thought that we might fail. America tackled the problem, resolute, determined, confident. Labor and management worked hand in hand. If any of us had stopped working to consider the consequences of failure, the job would never have been done.

Let us be as sure, as resolved, as united in driving toward V-U Day—or Victory over Uncertainty Day—as we were toward V-E and V-J.

All the factors necessary to create unequalled prosperity in America are at hand. Never before in history have we had such a combination of skilled labor, productive capacity, managerial ability, scientific research facilities, and such a backlog of demand for goods and services. Never have we had such an accumulation of buying power or so wide a distribution in the hands of the public.

If I were a banker, and a businessman came to me with assets like that, I would lend him anything he wanted.

I am confident that if we do not divert the flow of private capital away from productive job-making, by taxes or otherwise, or undermine the system with unwarranted

Starts Rolling

one who entertains fears and doubts of the future—then read what Mr. Lammot du Pont, chairman of the board of E. I. du Pont de Nemours and Company had to say in "Reconversion and jobs", in a recent interview with William Hillman, Washington Radio analyst. Read also what REMA has to say about the locker storage business. How Alco Valve is expanding and the encouraging reports of United Refrigerator Corporation and others.

Governmental restrictions, we will achieve a high level of employment at good wages, fair and reasonable prices for more and better goods, and a general level of prosperity and security throughout the nation.

Now please note well my qualifications. If we are to have more employees, we must have more employers. And if we are to have more employers, we must encourage investment, whether it be in the securities of a great corporation or a corner cigar store. If we are to have employers in *new* industry, we must have a possible profit reward as an incentive.

Chemical Industry to Grow

We have every reason to expect that postwar employment in our own company will exceed that of any peacetime year. We believe that our sales volume in two years or so from now will exceed our 1939 totals by as much as 50 per cent. And within five years, we have forecast that our sales in new prewar and postwar products together should equal our entire 1939 output.

The chemical industry, its roots in the soil of scientific discovery, serves as a sort of seed-bed for other industries. In the present employment picture, its significance is not confined to those of its own payrolls, although that number is not inconsiderable. But it is in supplying and developing new fields that it offers the greatest promise of future gains. Rayon is a good illustration. It was a poor-relation industry before 1928, employing in all American production about 25,000 people. By 1939 this had grown to 45,000 and probably the postwar total will be much greater.

Air-conditioning has become a major development of the past decade, and is one of the most important problems of the future. It is closely linked with mechanical refrigeration.

LOCKER STORAGE SALES TO BOOM SOON

INSTALLATION of frozen food locker facilities in apartment buildings and for operation in conjunction with meat markets, food stores, filling stations and many other types of retail establishments is expected to boom on a nationwide scale as soon as materials are available for the manufacture of suitable equipment.

This was predicted recently by spokesmen of the mechanical refrigeration industry who pointed to the "trend toward small locker plants" which had gained considerable headway before the war but which was interrupted by wartime restrictions.

The building of these additional locker facilities will be a part of the expansion of the locker plant industry itself, which now includes more than 6,000 plants serving 25 per cent of America's farm families. It is believed that 5,000 more plants will be constructed within the next five years.

Officials of the Refrigeration Equipment Manufacturers Association forecast that most of the apartment building and store operated locker facilities will include from 150 to 250 individual compartments for the storage of frozen foodstuffs. The average large community locker plant now contains twice that many compartments or more.

Localized or neighborhood frozen food facilities probably will gain their greatest popularity in the larger cities, REMA members report, while separate locker plants will continue to serve smaller towns. In both cases, the lockers will serve as adjuncts to home frozen food units and will be principally for the storage of larger quantities of foods than can conveniently be kept in the home.

"Early in the war," one REMA official said, "the government halted the building of frozen food locker facilities except for complete plants serving smaller communities.

Now all restrictions have been lifted and we expect the construction of frozen food lockers in apartment buildings and the resumption of the trend toward similar facilities in or as an adjunct to butcher shops, groceries, other food stores, filling stations, general stores, creameries, ice plants and, in fact, all other points where people assemble for buying purposes.

VALVE COMPANY INCREASES CAPITAL; WILL ADD TO WAR STAFF

PEACETIME demand for the valves and other products that it makes for air-conditioning and refrigeration equipment is so great that the Alco Valve Company, of St. Louis, Mo., will retain all of its 500 wartime employees and add more, Russell Maguire, president and general manager of the company, announced recently.

Mr. Maguire disclosed that capitalization of the company is being quadrupled from $108,000 to $432,000 by the transfer of funds from surplus to capital and that the enlarged quarters at 865 Kingsland Avenue, St. Louis, to which Alco moved during the war, will be retained.

"We will have a substantial increase in our business in the refrigeration field which has been running $3,500,000 a year during the war," said Mr. Maguire. "We also expect increases in air conditioning and the hydraulic field and are expanding our operations to meet the needs of jobbers and manufacturers."

COMMERCIAL REFRIGERATOR MANUFACTURER REPORTS POSTWAR BOOKINGS OF THREE TIMES BEST PREWAR YEAR

ANNOUNCING the firm's return to civilian manufacture after four years of all-out production for the armed forces, R. S. Wieding, president and general sales manager of the United Refrigerator Manufacturing Company Sales Division, reports that in the three weeks after the Jap surrender his firm had booked orders from franchised distributors totaling over three times the volume of its best prewar year.

Citing as an example of what leading distributors are anticipating from their postwar markets, Wieding reported an order placed by the Morton Show Case Company of Dayton, Ohio, calling for 1571 units and totaling $565,750.00. "E. G. Sanders, president of the distributorship, informed me that this was merely his initial order and that his market will absorb many more units in the first postwar year," said Wieding.

"A-P" OFFICIAL SEES BRIGHT FUTURE FOR REFRIGERATION INDUSTRY

IN A recent interview with Mr. E. A. Vallee, Vice President and General Manager of the Automatic Products Co., Milwaukee 10, Wis., the question was asked as to what immediate and long range effect could now be expected on production activity and employment at Automatic Products Company.

In reply to this question, Mr. Vallee sketched a promising and enthusiastic picture of the possibilities for growth and expansion in the field of low temperature controls and equipment. Not only have there been no reduction in personnel in this department at "A-P", but that new additions are being made to this force to handle the upswing in production schedules required to meet the great backlog of demand for control equipment of all kinds.

The nation-wide expansion of the frozen-food markets as well as locker plants for family storage that will take place in the coming months and years, Mr. Vallee believes, will virtually revolutionize the food buying habits of city and rural dwellers alike. Speedy distribution of fresh foods such as meats, vegetables, and fruits, frozen at the packing plant or in the field, or after receiving and processing by the distributor, then purchased and kept in storage by the consumer, will mean a great improvement in the food and health standards of the entire country.

In order to adequately handle the low temperature freezing and storage of food, on a nation-wide scale, tremendous increases in the production of equipment and temperature control devices will be required. At "A-P", the early effects of this demand are

already noted, with a constantly increasing volume of orders and inquiries for every type of refrigeration control made by this company. As rapidly as new materials and supplies are made available, through the relaxation and withdrawal of W.P.B. controls, "A-P's" production schedules are being increased and shipments made. To keep pace with the rapid acceleration of demand for equipment on the part of refrigerating machinery manufacturers, "A-P" plans to make constant additions to its staff and facilities.

Another field closely allied with food refrigeration that is due to make giant strides in the near future, Mr. Vallee reports, is the air conditioning field. Systems not only for public buildings and retail, industrial, and office structure installation, but for the medium-class residence will become more and more commonplace within the next few years, and installation and maintenance costs will be substantially reduced. As a result, this segment of the general refrigerating equipment field will require vast quantities of refrigerant controls designed for air conditioning systems. It is anticipated that the production of this type of control equipment will occupy a greatly increased share of attention at "A-P".

BRUNNER PLANT NOW BOOKED TO CAPACITY

IN AUGUST Brunner Manufacturing Company had its largest month in point of shipments and billing in the history of the company, according to George L. Brunner, president.

"The backlog of orders is sufficient to operate the present facilities at capacity for a year," he added, "but with the new equipment already purchased we will be in a receptive mood for new business very soon."

"Previous to the war," he went on "the major portion of our production of condensing units for refrigeration was in smaller sized units. These were absorbed by the ice cream industry, the milk industry, water coolers, refrigerated case manufacturers, etc.

Today the trend is toward the larger units used in cold storage—quick freeze, walk-in coolers, industrial applications, air conditioning, locker plants, farm freezers, etc.

"The locker plant industry alone will absorb a great number of the larger sized units. The bulk of the requirement is for three and five-horse power units. Cold storage and air conditioning sizes range from 5 h.p. to 30 h.p. With these sizes increasing in demand, it has been necessary for us to expand our manufacturing operations to enable us to use continuous production line methods in the manufacture of the large units as we have produced the smaller units in the past.

"The manufacture of room coolers in 3, 5, 7½ and 10 h.p. sizes will be resumed working in co-operation with another Utica manufacturer and this operation in reality constitutes a new industry for Utica."

SEEGER-SUNBEAM ASSEMBLY LINE STARTS ROLLING

Assembly line production of refrigerators by Seeger-Sunbeam corporation began the week of September 14, according to Arthur J. Lowell, vice president and manager of the company.

"Production will not be volume production as we have known in the past," Mr. Lowell said, "but the assembly line seems to be the only logical way of returning to work.

"Plans have been made for starting out with a heavy schedule," Mr. Lowell said. "We will be using more workers on the line than will be productive, but they will have learned their jobs to the point that production can be greatly accelerated when materials are available."

War-time developments are expected to be incorporated into the company's peace-time production. One such development is chromium plating of tools.

This plating will not only be used on tools, but may be adopted for improving quality of refrigerator parts. Hard chromium plating of tools before the war was a closely guarded method at various plants.

Seeger-Sunbeam developed its method to lengthen the life of tools used in the production of cartridges.

Experiments are now under way in plating worn parts of refrigerators returned for repair. Parts can be plated to replace worn surfaces and to give them practically wear-proof friction free surfaces, officials said.

SERVICE POINTERS

Practical Solutions of Your Service Problems

THIS department is an aid to service engineers who are seeking new devices or methods to improve their work. All the service pointers have been supplied by the subscribers. THE REFRIGERATION SERVICE ENGINEER invites readers to submit "down-to-earth" practical service and installation information. Five dollars will be paid for each pointer published. Every service engineer has one or more "tinks" that have proved useful in every day practice. Here is your opportunity to exchange service pointers with the other fellow and earn $5.00 for the information. Write up your idea today and mail it to the *Service Pointer Editor*.

MORE ON CONDENSER AUXILIARY

I WOULD like to take issue with Frank Depagnier regarding his Service Pointer on page 44 of the August issue. He puts his water-cooled (heat exchanger) auxiliary to the air-cooled condenser between the compressor discharge valve and the air-cooled condenser. On Army installations, where we have been using this same idea for the past three years, we recommend putting it between the air-cooled condenser and the receiver, for the reason that in a condensing process the coldest portion of the condenser should be at its termination or outlet.

If connected, as Mr. Depagnier suggests, there will undoubtedly be good results but not maximum results, because there will be a tendency for re-evaporation in the warmer air-cooled section for condensed liquid has passed from the colder water-cooled section. —*Submitted by H. D. Kuhl, Field Service Engineer, Office Service Command Engineer, Fort Douglas, Utah.*

S S S

FINDING THAT LEAK IN GRAYBAR

WHEN overcoming and repairing a seal or low side leak on Graybar machines, and after lapping in both seal faces and making sure that gasket, etc. is o.k., remove seal cover once more and upon close examination you will find a small vent hole in the shoulder part of the seal cover plate. This hole usually plugs itself up with sludge, etc., and if you are not familiar with it, can very easily overlook it. I am not sure of the original purpose of this opening, but it certainly gave me a long hunt for a leak. The solution is to use an 8-32 tap with suitable screw plus white lead on the threads. Do not attempt to tighten up too hard on screw, as this seal cover plate is aluminum, and also because only two or three threads at most are holding. Screw must be flush to plate on inside. *Submitted by Henry Chmela, New York, N. Y.*

S S S

GASKETS CAUSE STUCK-UP COMPRESSOR

I WORKED on a machine that came in the shop with the pump stuck-up. After I had dismantled it and cleaned it thoroughly and put it back on the job, it ran about 18 hours and stuck-up again. It did that three or four times before I could locate the cause. I found that when I put oil on the gaskets I was using and then pulled the head bolts down, a substance almost like glue, or worse, would squeeze out and run down the piston wall and stick up the pump. When we changed gasket material, it worked all right. *Submitted by Joe Lynch, Bremerton, Wash.*

S S S

SIMPLE TWIST OF WRIST REPAIRS MOTOR

ON CAPACITOR motors, Delco type, that fail to start with good capacitors, turn the worn felt thrust washers on the starter lever contact arm ½ turn. This will double the life of the arm and the job is completed without the use of any new parts. *Submitted by Merton J. Comire, Woonsocket, R. I.*

S S S

SUBSTITUTES FOR HARD-TO-GET RUBBER

IN THESE days of shortages, we often find it necessary to substitute material we have for material we need but cannot procure. Occasionally we find it hard to get rubber motor mountings. This has been my solution.

For fractional horsepower motors that use strip rubber mountings, I cut pieces of used V belts and insert. The result is highly satisfactory and the cost is nothing at all.

As a substitution for grooved rubber stripping for motors, I insert plain rubber stripping in a board groove cut to fit, and cut groove with a power saw. This has often saved me time. *Submitted by Walter R. Lowe, Sparta, Ill.*

REPAIR OF ELECTRIC MOTOR

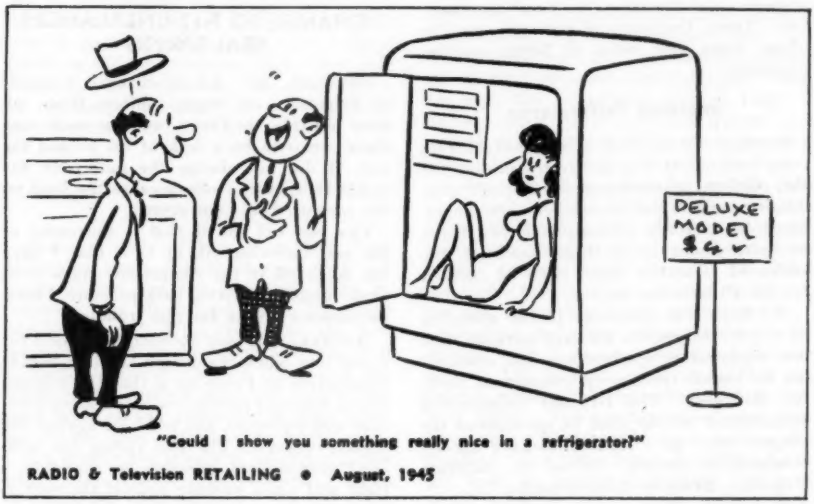
A CONSIDERABLE amount of time can be saved in the repair of capacitor type motors by rebuilding the contact points when the necessary new points are not immediately available. The burned points are cleaned and a small piece of silver solder or easy flow melted on them with a torch. Then file and flatten them off. I found that the switch points can be used almost indefinitely, if necessary.

On motors having plastic cases, the bolts can be reset in them when broken by using the regular stick shellac or the red sealing wax.

Discussing motors brings to mind a tough one I had lately. I was called out-of-town to service a ⅓ h.p. unit that had a bad motor on it. I knew what style motor it used so I took two spares along so as to be sure I had a good one. I installed the motor and hooked up the 220 V. single phase. My motor sounded as though it was running under an overload and it got hot. Believing that perhaps I only had 110 V., I changed my motor hook-up and tried again. This time it really took off and sounded better, but it still got hot. I set my other motor on the floor and hooked it up to 220 V. and it hummed and growled the same way. I then suspected power trouble. I checked my motor leads with a 110 V. bulb. It blew at once.

Simple After It Is Found

I then called the district representative of the power company, and had him come out and check the voltage. We started at the service entrance switch and checked to the motor terminals. He said that the voltage was all right, holding at 234 V. all the way to the motor. I asked the man to check the voltage at the motor when I started it. We did, and this answered our problem. The 234 V. diminished to about 160 V. telling us that we had a fuse out on one side of the three wire system and the voltage was feeding back through the neutral wire. It was late that night and too dark to locate where this trouble might be. We hooked the motor up for 110 V. and took one side of the 3 wire 220 V. system and ran the motor o.k. until the proper repairs were made. *Submitted by Archie Keefover, Grafton, W. Va.*



"Could I show you something really nice in a refrigerator?"

RADIO & Television RETAILING • August, 1945

QUESTIONS AND ANSWERS

On Problems of Servicing, Installation and Maintenance of Household and Commercial Refrigerating Equipment—Send Your Problems to the Question Box.

MORE ON QUESTION 687

WE HAVE read the July 1945 issue of your magazine with our usual interest. The Question Box, in particular, is a credit to the varied knowledge of its editor.

However, the answer to Question No. 687 in the above issue does not apply to all makes of compressors, more especially our Brunner units. The person asking this question wanted to know if there was a difference in high and low temperature condensing units and "Question Box" replied that there is no difference in "mechanical features, design, size and arrangement."

A Choice of Valves

For some time, we have supplied compressors equipped with one of three types of valves. Compressors sold for low temperature or commercial duty are built with the "F" or flapper type valve. Some commercial units and all units for air conditioning use the "K" or "D" valve. The "F" valve construction is better suited for low temperature operation because the clearance volume is small. The other two types of valves are distinguished by generous gas passages and the quiet "cushion" construction. These features are desirable for the larger mass flow rates at higher suction pressures.

Improves Performance

Needless to say, this is a manufacturing complication but it is partly responsible for the efficient performance of Brunner condensing units in the low temperature ranges. Since the practice of supplying two types of valve plates is far from universal, the editor of "Question Box" is to be excused for his all-inclusive answer.

We hope this will come to the attention of Service Engineers who are working with low temperature applications and attempting to install speeded-up commercial units for this duty. The Brunner Engineering Department will be glad to recommend the proper valve gear for regular and special temperature ranges.—*Alfred D. Sullivan, Engineer, Brunner Manufacturing Co.*

THERMAL UNIT NO LONGER MADE

QUESTION 705: We have a room cooler Model A. X. manufactured by Air Devices Corporation of Chicago, Ill., who evidently have gone out of business as we are unable to contact them. We are wondering if you can give us some information as to where we can have the compressor exchanged or repaired. Any information you can furnish us will be greatly appreciated.

ANSWER: If I recall correctly, the unit used in the room cooler manufactured under the name of Air Devices Corp. was originally made by the Thermal Refrigerating Co. of Chicago. Neither one of these companies is now in business.

The compressor I have in mind is an eight cylinder V type driven by a motor bolted directly to the compressor. Compression is accomplished by the rotation of the cylinder.

When the Thermal Refrigerating Co. went out of business, many of the units and parts were purchased by Julius A. Rosen and Sons, Philadelphia, Pa., distributors for Kelvinator in that area. You might be able to obtain parts from them if any are still available.

CHANGE TO F-12 UNBALANCES SEAL SPRING

QUESTION 706: I have changed a couple of Frigidaire ice cream cabinets from sulphur dioxide to Freon, and in each case there seems to be a leak of oil around the seal. I did not change the pulley on the motor to a smaller one because the load on the converted was not great.

Can you tell me if that is the cause of the seal throwing oil, or is it that I have too much oil in the compressor crank case, or the higher operating back pressure. Please recommend a cure for this trouble.

ANSWER: The only accountable reason for a seal leak when changing a sulphur dioxide compressor to Freon-12 is that the original seal is designed for the lower operating pressure and therefore will not hold against the higher pressure. The seal spring has sufficient compression pressure to maintain a tight seal when working against the operat-

ing pressure of sulphur dioxide but is not able to counterbalance the Freon pressure exerted at the seal face.

SWEATING ON FREEZER WALLS

Question 707: I have built two freezer cabinets, one is insulated with Zonolite and the other with rock wool. There are six inches of insulation in the walls, eight inches on the bottom, and four inches on the top. The evaporator consists of 110 feet of ½ inch tubing and the unit is ¼ hp.

I have installed these cabinets in cellars where the temperature is about 68° F. and 60 percent relative humidity. Both cabinets sweat on the sides and top although they will maintain 0 degrees. Siralkraft paper is used on the outside of the insulation over which is a finished surface of Masonite board.

Could you suggest a remedy for the trouble and give me the insulating values of Zonolite and rock wool as compared to cork.

Answer: The construction of the freezer cabinets seems to be adequate for the temperatures you are maintaining. I believe you will find the dew point temperature much higher than you estimate. That is, you may find the relative humidity more nearly 80 percent than 60 percent. We do not find conductivity tables on Zonolite but the K value of rock wool is only slightly different than that of corkboard.

One thing that may be causing the sweating is the packing of the insulation to a uniform density. If any spots are not adequately packed, the heat transfer at these points would be relatively high. The only suggestion as a cure for your difficulties is to adequately ventilate the cellar, thereby lowering the relative humidity.

CLEANING AND CONVERTING STUCK SYSTEM

Question 708: I have a six hole Frigidaire ice cream cabinet charged with sulphur dioxide that has stuck up. The refrigerant was discharged when the compressor "froze." What would be the best procedure to clean the system and convert it to methyl chloride? I have considered dismantling the entire system and washing the parts with carbon tetrachloride than blowing out the coils and tubing with air.

If I change the system to methyl chloride what is the relative rpm. compressor speed to obtain the same capacity? Do you know if this cabinet will make a satisfactory home freezer?

Answer: I believe you are up against a problem that will require a complete cleaning of the Frigidaire unit regardless of the refrigerant used. You, no doubt, are aware of the corrosion that can occur in a methyl chloride system when water is present.

Your suggestion for cleaning is all right except that you have not mentioned dehydration of the component parts before they are again installed.

When changing from SO_2 to methyl chloride, the capacity is increased about 25 percent. The heat of compression is higher and it would therefore be advisable to increase the size of the condenser. Reducing the speed of the compressor about 25 percent will also be necessary. Increase the spring tension on the seal to balance the higher operating suction pressure.

Many hundreds of ice cream cabinets are now in service as frozen food cabinets. I do not believe them to be entirely satisfactory, but they do a relatively good job of holding temperatures around zero.

HIGH HEAD PRESSURE AND CONTINUOUS RUNNING

Question 709: I have been working on a Frigidaire ice cream cabinet.

It causes trouble by short cycling and defrosting. I changed it with sulphur dioxide. This helped some for two or three days, then it completely defrosted, running continuously. The compressor and condenser were very hot, and finally building up so much pressure that the motor could not start the compressor without help. I decided there was air in the system so I purged it, adding a little more gas and some oil.

I also pumped the gas in the receiver, then let it back in the system, thinking a valve might be sticking and the returning gas would help to break it loose. The machine is now freezing about normal. The head is not very hot and the suction line feels cool, but not frosted next to the compressor.

Checking by gauge shows the low side around 0 to 2 pounds, and the high side around 120 pounds. The motor has no trouble starting the compressor and is running quiet. The machine now runs continuously. What would you say is the trouble? How many hours should it take to get back to normal operation? It is a 4-hole machine with a large cooling com-

"WHEN A JOB CALLS FOR MORE THAN ONE EVAPORATOR ON A SINGLE UNIT . . .

I call for an MODEL 235 Suction

WHEN A JOB CALLS FOR MORE THAN ONE EVAPORATOR ON A SINGLE UNIT . . .

I call for an A-P MODEL 235 Suction Pressure Valve . . . It's a good feeling to know what a Valve can do . . . *and I know!* . . ."

THAT is the comment from a Refrigeration Service Engineer when we asked him regarding his personal experience with "A-P" Valves.

Confidence like this is based on practical, day-in day-out experience in maintaining the nation's refrigerating machinery in spite of today's difficulties and handicaps. It is a trust shared by a widespread army of refrigeration service engineers who know that dependable "A-P" Controls, Valves, and Solenoids save them time-wasting call-backs — insure *customer satisfaction.*

A-P has cracked some hard nuts in the way of refrigeration servicing problems. Always feel free to consult us about yours!

AUTOMATIC PRODUCTS COMPANY

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A-P DEPENDABLE *Refrigerant Valves*

STOCKED AND SOLD BY REFRIGERATION JOBBERS EVERYWHERE . . . USED AND RECOMMENDED BY REFRIGERATION SERVICE ENGINEERS

partment. It has given very good service in the past 15 or 16 years.

ANSWER: From your description of the Frigidaire operation and pressures, I believe there is still some air in the system. The head pressure should not be over 100 pounds at zero pounds back pressure. There is a possibility that the system is overcharged; thereby reducing the effective condenser surface. It is also possible that the high head pressure is due to dirt accumulating on the condenser.

Some Possible Causes

Continuous running may be caused by the insulation being partially saturated with water. Another reason for continuous running is inefficiency of the compressor. Either the suction or discharge valves may be leaking.

A warm cabinet should pull down to operating temperature in six hours or less, assuming the mechanical parts to be in good working order.

If the machine has given continuous service for 15 to 16 years, it is more than likely that the unit needs a complete overhaul to put it back in perfect condition. Air in the system is more than likely entering at the seal; thus, causing the high head pressure.

TROUBLE AFTER REPAIRS ON ON GRUNOW ARE MADE

QUESTION 710: We have been having a great deal of trouble with our Grunow service work. We repair the boxes in our shop, check the running time and operation of the unit for three days before returning the box to the customer. But after the customer gets the box, they usually complain that it defrosts. Now is it possible that there is dirt in the lines some place, and in moving, the sediment is stirred and pumped through the system causing it to defrost and run continually? Is there a possibility of moisture in the job?

ANSWER: The trouble you have been having with Grunow systems is very likely due to moisture in the system. This may be present when the machine is running with a partial refrigerant charge and not cause difficulty. When the system is properly charged, the moisture present, along with any foreign matter, will circulate and cause difficulty.

A number of service pointers on Grunow refrigerators have appeared in this year's issues of THE REFRIGERATION SERVICE ENGINEER. A study of these pointers may reveal the reason you are having trouble.

REMOVING LENSES FROM PITCH AFTER FREEZING

QUESTION 711: Would like to have a little more definite information on the "unfreezing" process of removing the pitch from lenses. We have an optical company here which is interested in this process, and would like to build one for them.

ANSWER: The principle upon which lenses are removed from the pitch is based on the rapid temperature change of the lens. When the mounted lens is placed in a cool place, the difference in the expansion of the pitch and lens frees the lens.

Pitches are prepared for summer or winter grinding. If the company mixes the pitch to its own formula, the temperature at which the lens will release must be found by experiment. The Midwest Scientific Company, prime contractors to the U. S. Government, remove the lenses by placing them in a temperature of 15°F. above zero. They find it necessary to vary this temperature to as low as 0°F., depending on the temperature in the grinding room or the pitch formula used.

NORGE SHOULD COOL 80 CUBIC FOOT REFRIGERATOR

QUESTION 712: I have an 80 cubic foot refrigerator with 3 inch walls and 1½ inch cork insulation. I want to maintain a temperature of 35 to 40 degrees using methyl chloride as the refrigerant.

I have a ⅝ inch bare copper coil with 30 square feet of surface and a Norge rotary unit with 3800 cubic inches displacement at 500 rpm. The unit is powered by a ½ hp motor. Please advise me if this equipment will do the job.

Rough Estimate Says It Will Do Job

ANSWER: Although the information you have given on the refrigerator is not complete, I believe that 30 square feet of evaporator surface would be sufficient to give you the desired operating temperature.

You can roughly approximate the capacity of the coil by multiplying the square feet of surface by 2 Btu and by the temperature difference at which operation is desired.

This figure will give you capacity of the coil in Btu per hour. I have roughly estimated the overall refrigeration load on your box as being 900 Btu per hour and I am sure that a ½ hp compressor will handle the job.

Government Bureaus—*News and Rulings*

CEILINGS FOR NEW REFRIGERATORS

CEILINGS for new household refrigerators have been established at levels that will maintain, on the average, March 1942 prices to consumers, the Office of Price Administration announced today.

In a new regulation governing prices of "reconversion" refrigerators (those manufactured after July 1, 1945) at all levels of sale, the agency set the following ceiling prices:

Manufacturers—Ceiling prices in effect on March 30, 1942, for the same or closely similar models, if these are higher than prices as computed under the individual reconversion repricing formula included in the regulation.

In order to make use of the individual adjustment provisions of the regulation manufacturers must file applications within the two-week period ending November 10, 1945, OPA said. Firms entitled to individual adjustments who have not filed by the end of this period may still file under the reconversion pricing order of July 28, the provisions of which are closely similar to those of the new refrigerator regulation, the agency explained. Several manufacturers have already filed, OPA said, and where increases are shown to be required, orders granting them will be issued immediately.

Distributors—Margins will be reduced slightly over one percentage point as compared with "initial margins" (those included in the original asking price) on record in March 1942, but should yield returns at least as high as those realized in 1941, OPA said.

Retailers—Dollars-and-cents prices listed in the regulation or to be added later. These allow a margin in each case less than recorded 1941 initial margins by slightly over one percentage point, OPA said. Here, also, there will be no actual reduction, dollar-wise or percentage-wise, in 1941 realized margins, the agency explained, since dealers will not find it necessary to accept trade-ins at above their resale value, or hold special sales in order to stimulate consumer buying.

Manufacturers will tag all units with the retail ceiling price, both as a service to retailers and as an aid in the enforcement of the new ceiling prices, OPA said.

LIMITATION ORDER L-5-D REVOKED

Supplementary Limitation Order L-5-d, and all authorizations issued under it, are revoked effective October 10, 1945. Transfers of new domestic mechanical refrigerators may then be made without regard to the provisions of Order L-5-d, any authorization issued under it, or any grant of appeal, or authorization relaxing its restrictions. This revocation does not affect any liabilities incurred for violation of the order, or of actions taken by the War Production Board under the order. Transfers of new domestic mechanical refrigerators, formerly controlled by L-5-d, remain subject to all other applicable orders and regulations of the War Production Board.

* * *

CEILINGS ON SMALL MOTORS RAISED

AN INCREASE of nine per cent of producers' ceiling prices for fractional horsepower motors has been granted by the Office of Price Administration.

The increase, effective October 16, 1945, is designed to remove any price impediment to expansion of production of these motors, which are used in vacuum cleaners, washing machines, and scores of other appliances and electric-powered products.

Resellers of motors also may increase their prices by nine per cent. Because motors usually represent a part in a completed product like a vacuum cleaner, that lasts for many years, the effect of the increases on the cost of living will be insignificant.

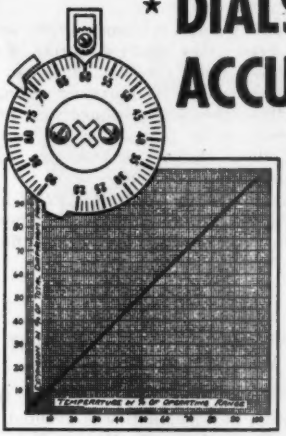
Because fractional horsepower motors were manufactured throughout the war for military uses, the industry does not fall into the classification of a reconversion industry for which a price increase factor can be provided, such as is provided for aluminum ware, washing machines, and ironers, not produced in volume during the war years.

The nine per cent increase in producers' prices was authorized after a study of cost data prepared by the industry, and in compliance with President Truman's Executive Order 9599.

This order authorized OPA "to correct maladjustments or inequities" in prices which would "interfere with the effective transition to a peace-time economy."

★ DIALS are *EVENLY* and ACCURATELY CALIBRATED

OVER THEIR *ENTIRE* RANGE BECAUSE OF THE STRAIGHT-LINE EXPANSION OF HYDRAULIC-ACTION

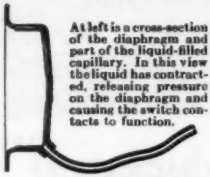


With each degree of temperature, the expansion and contraction of the solid-liquid charge of Hydraulic-Action is exactly the same. That is the reason why the dials on all White-Rodgers Hydraulic-Action controls are *evenly* calibrated—and always are accurate over their *entire* range.

8 EXCLUSIVE FEATURES OF WHITE-RODGERS HYDRAULIC-ACTION TEMPERATURE CONTROLS

1. May be mounted at any angle or position, above, below or on level with control point.
2. Hydraulic-Action principle incorporating solid-liquid filled bulb and capillary provides expansion force comparable to that of a metal bar.
3. Diaphragm motion uniform per degree of temperature change.
4. Power of solid-liquid charge permits unusually sturdy switch construction resulting in positive contact closure.
5. Heavier, longer-wearing parts are possible because of unlimited power.
★6. Dials are evenly and accurately calibrated over their entire range because of straight-line expansion.
7. Controls with remote bulb and capillary are not sensitive to change in room temperature. Accuracy of control is not affected by temperature changes in surrounding area.
8. Not affected by atmospheric pressure. Works accurately at sea level or in the stratosphere without compensation or adjustment.

UNIFORM EXPANSION OF HYDRAULIC-ACTION PERMITS TROUBLE-FREE INSTALLATION

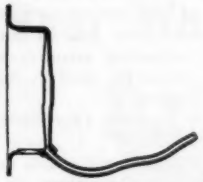


At left is a cross-section of the diaphragm and part of the liquid-filled capillary. In this view the liquid has contracted, releasing pressure on the diaphragm and causing the switch contacts to function.

CONTRACTED

No going back to adjust or recalibrate when you equip with White-Rodgers Hydraulic-Action controls. How this works is shown in the illustrations below.

In this cross-sectional view, the liquid charge of the capillary has expanded with a rise in temperature. The positive force of this hydraulic action forces the diaphragm outward and causes the switch contacts to function.



EXPANDED

Illustration of the White-Rodgers diaphragm body, the actuating element of every White-Rodgers temperature control. It is so designed as to exert FULL pressure at the point of contact with the switch mechanism.

WHITE-RODGERS ELECTRIC CO.

1292G CASS AVENUE ST. LOUIS 6, MISSOURI

Controls for Refrigeration • Heating • Air-Conditioning

NEW REGULATIONS FOR PREWAR REFRIGERATORS

IN AN action clearing the way for issuance of a reconversion pricing regulation for postwar manufactured household mechanical refrigerators, the Office of Price Administration today reworded the two existing refrigerator regulations to confine their coverage to units manufactured before July 1 of this year. The action took effect October 10, 1945.

Of the half million unused refrigerators made subject to an inventory freeze early in the war by the War Production Board, about 15,000 remain in the nation's stockpile, OPA said. When these are released for general sale, they will remain subject to the two existing regulations—one for manufacturers and one for distributors and dealers—governing sales of new household refrigerators. Revocation of these regulations may be expected soon after the frozen stockpile is released since the demand for refrigerators is widespread and the number of prewar models is very small. If any modifications in the regulations are needed before revocation, they will be made by special orders, OPA said.

Refrigerators manufactured after July 1, 1945, will be covered by a new regulation to be issued shortly, it was announced.

S S S

NEW PRICE INCREASE FACTOR

AN INDUSTRY-WIDE price increase factor of five per cent was established by the Office of Price Administration today for use in computing reconversion ceiling prices for automatic electric temperature control equipment.

The action becomes effective October 9, 1945.

Through establishment of this factor, both manufacturers and resellers of automatic electric temperature controls for all heating, air conditioning and refrigeration except industrial processing controls, may calculate their new 1945 ceiling prices by adding five per cent to their pre-war prices.

In the case of manufacturers, present ceiling prices are those at which individual producers delivered or offered to deliver equipment on October 1, 1941.

To determine ceilings, manufacturers may multiply their October 1, 1941, prices by the five per cent increase factor. The sum of the resulting figure and the October 1, 1941, price is the manufacturer's new 1945 reconversion price.

Resellers' present maximum prices are the highest prices they charged during March, 1942. Under today's action, they, too, may add five per cent to their present ceilings to obtain their new 1945 reconversion prices. Absorption of the increase is not required because these electric controls are seldom sold to individual consumers.

(Order No. 48 under Section 22 of Maximum Price Regulation No. 591—Specified Mechanical Building Equipment—effective October 9, 1945.)

S S S

INVENTOR WINS HIS SUIT AGAINST CROSLEY CO.

A judgment against the Crosley Radio corporation of Cincinnati was granted William F. Dart of Mason, Mich., after seven years of litigation on a patent suit.

The suit developed from a contract Dart made concerning the corporation's use of a patent on refrigerator doors.

Federal Judge Edward J. Moinet directed Crosley to pay Dart $5,000 a year with interest until the invention is assigned back to him, the payments to be retroactive.

S S S

SERVICE BEHIND THE SERVICEMAN

(Continued from page 24)

What will all this mean to the individual player—the serviceman? The prestige inherent with membership on a championship team, naturally. Even more—it will pay him dividends. The information and help given him by Philco Service will enable him to produce speedier, better service—more income.

The advertising; national by Philco, regional by the distributor, and local by the dealers and servicemen, will all add up to more business for the Philco Service member.

The organization membership is geared to the distributor, who will consider Philco Service members as much a part of the team as his own sales organization. In the merchandising plan of distributors, members will occupy a position which will bring added business to the members.

Philco Service (membership is free) is setting the pace for another first in the appliance industry.

Compact, Easily Installed Unit Does Away With Draught Beer Waste

The uniform, constant 40 deg temperature of the new Temprite cooler means that each and every glass is dispensed perfectly. Common beer waste, which is invariably the result of incorrect temperature, is eliminated.

SOME TERRITORIES STILL OPEN FOR AGGRESSIVE MERCHANDISING OUTLETS . . . Where territories are franchised, name of present outlet will be furnished so that local arrangements can be made . . . *WIRE US TODAY.*

WATER COOLERS • TEMPERATURE CONTROL VALVES • OIL SEPARATORS • HEAT EXCHANGERS

TEMPRITE PRODUCTS CORP.

Originators of Instantaneous Liquid Cooling Devices

45 PIQUETTE AVENUE DETROIT 2, MICHIGAN

Excerpts from Detroit's New Refrigeration Code

AFTER six years of discussion and study by the city safety council, local contractors and other interested groups, the City of Detroit's New Code governing refrigeration and air conditioning went into effect September 27th. The code embodies a licensing law requiring three years of practical experience before a license will be granted; a permit for the installation of equipment; an annual owner license to operate commercial equipment and a biennial license to maintain and operate a domestic multiple system. Annual and biennial inspection of the equipment is required when granting the operator licenses.

The SERVICE ENGINEER presents in the following some of the more interesting sections of the code.

Section I—Administrative

1.05: This ordinance shall apply to all new refrigerating systems and to parts of present systems repaired, replaced, or added to subsequent to its adoption.

1.1: No person, firm or corporation shall install or contract to install, alter or service any refrigerant containing part of any refrigerating system in the city of Detroit, without first securing a license therefor from the Mayor of the City of Detroit except as herein provided.

A contractor's license to install, alter and service refrigerating systems shall be issued by the Mayor upon the recommendation of the Board of Examiners when a fee has been paid and a duly executed bond in the Sum of One Thousand ($1,000.00) Dollars running to the City of Detroit for the faithful observance of the provision of this Ordinance has been filed with the Department. Such bond shall be a personal bond with two sureties, or one from a recognized and approved surety company acceptable to and approved by the Corporation Counsel of the City of Detroit.

All such licenses shall be renewed annually and shall be revocable by the Mayor upon recommendation of the Board of Examiners.

Causes for revocation of licenses shall be gross incompetence, gross neglect, deliberate misrepresentation or wilful failure to comply with the requirements of this Ordinance.

A license shall be classified and limited as to definite refrigerants and types of refrigerating systems with which the applicant is familiar in the installation or servicing, and the applicant shall be licensed for that particular refrigerant or refrigerants and types of systems; provided, however, any person, firm or corporation may make application for and receive a license to engage in the installation and servicing of all types of refrigerating systems containing any, or all, approved refrigerants.

No license shall be issued until the applicant has shown to the Board of Examiners by sworn affidavit that he, or it, has been actively engaged in the installation or servicing, or both, of refrigerating systems for a period of at least three (3) years, or has, in his regular employ and actively in charge, a person who has been previously engaged in the installation or servicing of refrigerating systems for a period of at least three (3) years, provided that credit for one (1) year of actual experience in the installation or servicing of refrigerating systems shall be extended to any applicant who shows on the sworn affidavit graduation in refrigeration from a recognized school of engineering. Also the applicant in the sworn affidavit shall show the refrigerant and types of refrigerating systems with which he has familiarized himself during his actual engagement or education in the installation or servicing, or both, of refrigerating systems.

Should the license given be based on a regular employee having three (3) years experience, the application shall name the employee as well as the employer. Should the employee's services terminate, the license shall be cancelled, provided, that a ten (10) day period may be allowed the employer, with approval of the Examining Board, to replace him by a qualified employee. The Department shall be notified when such change takes place and the new employee's name shall be entered on the current application.

The Board of Examiners shall determine, by written and oral examination, the qualifications of an applicant in accordance with the sworn affidavit submitted. The Board of Examiners shall determine the time and place for such examinations. There shall be at least three (3) members of the Board of Examiners present at the oral examination of any applicant.

1.15: No person, firm or corporation shall install, alter or make major replacements, such as receivers, condensers, compressors, piping, etc., in any part of any refrigerating system except as herein provided until such person, firm or corporation has filed with this Department and received an approved permit for the work specifically intended on each individual system; provided, that in cases of emergency the permit shall be obtained within seventy-two (72) hours from the time of installation, alteration or major replacement was started. Further, provided, that permits will not be required on the installation, alteration, or major replacement and use of refrigerating systems in single or two-family residences, or for new unit systems containing not more than six (6) lbs. of refrigerant in Residential Occupancies, or for new self-contained unit systems containing not more than 6 pounds of Group 1 refrigerant in Commercial Occupancies and not more than 20 pounds of Group 1 refrigerant in Industrial Occupancies, provided, that such unit systems comply with all other requirements of this Code.

Fees

1.30: Fees for the issuance of installation permits, licenses, certificates, examination of applicants for licenses and for inspections required under the provisions of this Ordinance shall be collected by the Bureau of Licenses and Permits of the Department of Buildings and Safety Engineering. The amount of such fees shall be established by the Board of Rules of said Department and shall cover the cost of inspection and supervision resulting from the enforcement of this Ordinance, but in no case shall the installation permit fees be less than one dollar ($1.00) or more than twenty dollars ($20.00) for each refrigerating unit; nor the license, certificate or inspection fees less than one dollar ($1.00) or more than twenty-five dollars ($25.00) for each unit; nor the Contractor's License fees less than ten dollars ($10.00) or more than twenty-five dollars ($25.00); nor the Operator's License and Examination fees less than one dollar ($1.00) nor more than six dollars ($6.00).

1.40: The owner of the building, structure or premises in which such refrigeration system or unit subject to inspection is maintained shall obtain an annual license from the Bureau for the maintenance and operation of each commercial and industrial refrigeration system or unit and a biennial license for the maintenance and operation of each multiple domestic system.

Board of Examiners: A board consisting of five (5) members appointed by the Mayor of the City of Detroit. The appointees to consist of two (2) members from the Department and two (2) general, licensed refrigeration contractors, and one (1) user of refrigeration equipment covered by this Code. This Board shall report to, and be directly responsible to the Commissioner.

7.21: A refrigerating system containing more than fifty (50) pounds of a Group (1) refrigerant and which includes air ducts shall be of the Indirect Type unless it falls within the limits of area to be conditioned as follows:

(a) Up to and including one thousand (1000) square feet of floor area, fan controls and dampers may be omitted.

(b) Above one thousand (1000) to five thousand (5000) square feet of floor area to be conditioned, approved fire dampers shall be provided to cut off the refrigerant containing part of the system from the duct system.

(c) Above five thousand (5000) square feet of floor area to be conditioned, both fire dampers and fans with controls shall be provided.

These provisions do not limit the requirements of other ordinance provisions.

Fire dampers and fan controls where used or required shall be of the positive self-operating type with manual resets.

Fan and damper controls shall be set to close the damper and stop the fan when the temperature of the air in the duct at the damper location reaches 210°F. where the damper is on the discharge side of a system containing a heating coil and shall operate at 125°F. when the damper is on the suction side of the system, or on the discharge side of a system containing no heating coil.

7.22: A refrigerating system containing more than one thousand (1,000) pounds of a Group (1) refrigerant shall be of the Indirect Type with all refrigerant containing parts installed in a Class "T" machinery room, provided that Paragraph 7.11 may be followed as far as connecting to equipment on the roof and parts mounted outside the building are concerned.

Section 11—Installation Requirements

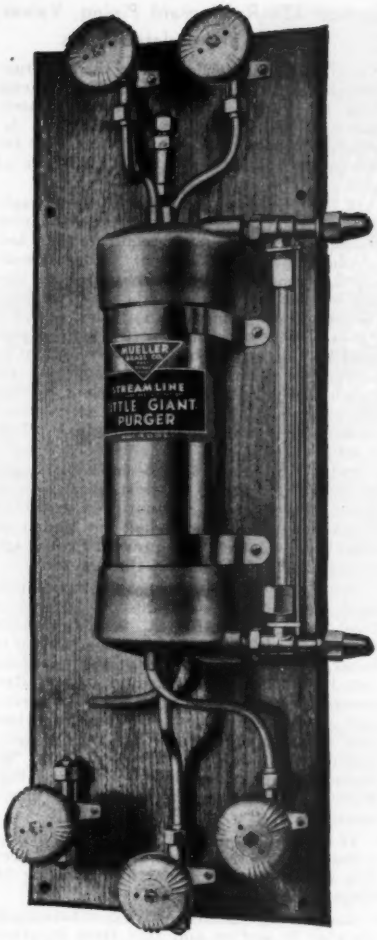
11.10: Condensing units located one above the other within the same room shall be provided with adequate and permanent facilities for service and inspection.

11.11: All moving machinery shall be provided with adequate guards in accordance with the American Standard Safety Code for Mechanical Power Transmission Apparatus, A.S.A. B-15-27 with revisions.

11.12: Adequate illumination and space for inspection and servicing of condensing units shall be provided.

11.13: Condensing units with enclosures shall be readily accessible for servicing and inspection.

11.20: All connections made with the public water supply shall be in accordance with



REDUCE YOUR OPERATING COSTS WITH THE "LITTLE GIANT" PURGER

The "Little Giant" Purger is an essential item and a profitable investment that quickly pays for itself because:

It reduces power costs
It saves expensive refrigerant
It reduces wear and tear on equipment

It is particularly important that any refrigeration system be purged after a shut-down period of any considerable time. The usual practice is to pump the refrigerant back into the receiver and lock it in by means of valves. Repairs or alterations are made on the system during this time, and it is practically impossible to evacuate the system completely, with the result that the remaining air will cause excessive head pressures.

There is no guesswork when you have the "Little Giant" Purger on the job. The sight glass gives visible evidence of non-condensable gases in the system. There is no loss of refrigerant. It is simple to operate and the reduction in power costs will pay for it many times over. Write us for full particulars and instructions for installation and operation.

MUELLER BRASS CO.
PORT HURON, MICHIGAN

the State of Michigan and City of Detroit Plumbing Codes and Regulations.

11.21: Discharge water lines from condensers or other refrigerating equipment shall be in accordance with the State of Michigan and City of Detroit Plumbing Codes and Regulations.

11.30: The installation of all electrical equipment and wiring shall be in accordance with the requirements of the City of Detroit Electrical Code and the latest edition of the National Electrical Code, as approved by the A.S.A.

11.40: The installation of all gas fuel devices and equipment used with refrigerating system shall be in accordance with the Official Building Code of the City of Detroit.

11.50: When the quantity of refrigerant in any one refrigerating system exceeds the amount given in the following table (Table D) for each one thousand (1,000) cu. ft. of room volume in which the refrigerating system or any part thereof is installed, then no permanent flame producing device or hot surfaces above 800°F. shall be permitted in such room and all electrical equipment in the room shall conform to the requirements of the City of Detroit Electrical Code and the National Electrical Code for Class 1, Group D, Hazardous Locations.

TABLE D

Refrigerant Name	Chemical Formula	Max. Quan. in lb. per 1,000 cu. ft. of room vol.*
Butane	C_4H_{10}	3
Ethane	C_2H_6	3
Ethyl Chloride....	C_2H_5Cl	6
Isobutane	$(CH_3)_3CH$	3
Methyl Chloride ..	CH_3Cl	10
Methyl Formate...	$HCOOCH_3$	7
Propane	C_3H_8	3

*Notes:

11.60: Refrigerating Machinery Rooms shall be provided with tight fitting doors and partitions, except where otherwise herein specified.

a. When the refrigerant containing parts of a system are located in one or more enclosed spaces, the cubical content of the smallest enclosed space, other than the machinery room, shall be used to determine the permissible quantity of the refrigerant in the system.

b. When the evaporator is located in a duct system, the cubical content of the smallest enclosed space served by the duct system shall be used to determine the permissible quantity of refrigerant in the system, unless the air flow to any enclosed space served by the duct system cannot be reduced below one quarter (¼) of its maximum, in which case the cubical contents of the entire space served by the duct system shall be used to determine the permissible quantity of refrigerant in the system.

Section 12—Refrigerant Piping, Valves, Fittings and Related Parts

12.10: All materials used in the construction and installation of refrigerating systems shall be suitable for the refrigerant used, and no material shall be used that will deteriorate due to the chemical action of the refrigerant or the oil, or the combination of both.

12.11: Standard weight steel or wrought iron pipe conforming to A.S.T.M. A-53, may be used for refrigerants requiring field test pressures (Table 3, Section 14) not exceeding 250 pounds per square inch, provided lap welded or seamless pipe shall be used for sizes larger than two (2) inches (I.P.S.). For 1¼ inch or smaller extra strong pipe shall be used for all test pressures except as hereinafter specified. For refrigerants requiring field test pressures (Table 3, Section 14) exceeding 250 pounds extra strong steel or wrought iron pipe conforming to A.S.T.M. A-53 shall be used.

12.12: Pipe joints may be screwed, flanged or welded. Screwed joints shall conform to A.S.A. Pipe Thread Standard No. B-2-1919. Exposed pipe threads shall be tinned or otherwise coated to prevent corrosion. Flange bolts shall project through nuts.

12.14: Valves, flanges and fittings may be made of cast iron, malleable iron, bronze or steel castings, hot forged, drop forged, or fabricated steel, wrought copper, bronze or brass, and shall be of the design and material listed and marked as standard by manufacturers for the particular refrigerant service and approved by the Department, provided that cast iron conforms to A.S.T.M. designation A-126-30 with revisions; Class "B" higher strength gray iron with not less than 30,000 pounds per square inch tensile strength.

12.16: Bushings may be used in fittings when the reduction is two or more pipe sizes. For single pipe size reduction, reducing fittings shall be used.

12.17: Pipe bends shall be substantially circular in section and free from injurious wrinkles, buckles, kinks and creases. This shall not be construed as barring corrugated pipe bends made of suitable material.

12.18: Copper or red brass pipe (I.P.S.) (not less than 80% copper) may be used in place of steel and wrought iron pipe if otherwise complying with Paragraph 12.11 for application.

12.19: On all copper pipe or tube the name or trade mark of the manufacturer and a designation indicating the class or wall thickness shall be permanently marked at intervals not greater than four and one-half feet.

12.20. Hard copper tubing used for refrigerant piping erected on the premises

Honeywell has the answer! Temperature controls for high or low temperature ranges — Pressure controls, both light and heavy duty — Room type thermostats to meet any specification — Control accessories which provide full flexibility of application — Some Honeywell Refrigeration Controls are equipped with mercury tube switches, some with open contact snap switches depending upon the design application. There is just the right Honeywell Control for every job. Honeywell branches and jobbers are conveniently located in all parts of the country. Factory trained engineers are ready to assist you with your control problems. Call them or write: Minneapolis-Honeywell Regulator Company, 2934 Fourth Avenue South, Minneapolis 8, Minnesota — Manufacturers of the famous Polartron System of Frost Free Refrigeration.

MINNEAPOLIS **Honeywell**
CONTROL SYSTEMS

The Polartron System of Frost-Free Refrigeration

shall conform to A.S.T.M. designation B-88-33, Class "K" or "L".

12.22: Soft annealed copper tubing used for refrigerant piping erected on the premises shall conform for quality to A.S.T.M. specifications B-88-33 with revisions, and:

(a) In sizes not greater than ⅝ inch outside diameter shall have a recognized standard wall thickness of .035 inches or greater.

(b) In sizes larger than ⅝ inch outside diameter only ⅝ inch or ¾ inch nominal sizes, class "K" or "L" shall be used.

12.23: Rigid metal enclosures shall be provided for soft annealed copper tubing used for refrigerant piping erected on the premises, except that flexible metal enclosures may be used at bends or terminals if not exceeding six (6) feet in length. No enclosure shall be required for connections between condensing unit and the nearest riser box, provided such connections do not exceed six (6) feet in length.

Joints

12.24: Threaded joints on copper or brass pipe of standard pipe size shall be made with extra heavy brass fittings which conform to A.S.T.M. B-62-36.

12.25: Joints on annealed copper tubing not exceeding ¾ inch in outside diameter may be made with flared compression fittings of approved type, provided that all such fittings shall be exposed for visual inspection.

12.26: Joints on hard drawn copper tubing, if of the sweated capillary type, may be made with an alloy having a melting point greater than 1000°F., or with a solder melting at a point below 500°F., but above 350°F., except as provided in Section 12.28 (b).

12.27: Fittings used in sweated capillary joints shall be cast red brass or die pressed brass or copper, or wrought brass or copper, or extruded brass or copper.

12.28: (a) Where allowed in Institutional and Assembly occupancies, soldered joints in piping or tubing erected on the premises shall remain mechanically intact when subjected to a pull-apart test equal to a pressure of not less than five hundred (500) pounds per square inch gauge pressure at a temperature of not less than eight hundred degrees (800°) F., except that this requirement shall not apply to soldered joints in pipe or tubing of ¾ inch nominal diameter or smaller when used in systems containing not more than thirty (30) pounds of refrigerant.

(b) In Commercial, Domestic and Industrial Systems containing more than one hundred-fifty (150) pounds of refrigerant, the soldered joints in pipe and tubing erected on the premises shall remain mechanically intact when subjected to a pull-apart test of three hundred (300) pounds per square inch gauge pressure, at a temperature of eight hundred (800) degrees Fahrenheit.

In Commercial, Domestic and Industrial Systems containing one hundred-fifty (150) pounds or less, a pull-apart test is not required but if soldered joints are used, the solder shall not fuse below four hundred (400) nor above five hundred (500) degrees Fahrenheit.

12.29: Any evaporator located in an air duct of an air conditioning system for human comfort shall be constructed to withstand without leakage a temperature of 1,000°F.

Stop Valves

12.30: Stop valves shall be in an immediately accessible location for operation.

Stop valves as required on refrigerating systems containing more than five hundred (500) pounds of a group (1) refrigerant or more than fifty (50) pounds of a group (2) or group (3) refrigerant shall be provided with fixed means of operation.

Stop valves shall be installed on all systems containing more than twenty (20) pounds but less than one hundred-fifty (150) pounds of refrigerant at the following locations:

(a) Each inlet and each outlet pipe of each compressor.

(b) Each outlet of each liquid receiver.

In systems containing one hundred (100) pounds or more stop valves shall be placed at the following locations:

(a) Each inlet and each outlet pipe of each compressor.

(b) Each inlet and each outlet pipe of each liquid receiver.

(c) Each liquid and each suction branch header.

Stop valves shall not be placed between a pressure relief device, pressure limiting device or other protective device controlling pressure and that part of the refrigerating system protected thereby.

12.32: Stop valves used with annealed copper tubing or hard drawn copper tubing ¾ inch nominal size and smaller, shall be securely mounted independent of tubing fastenings or supports.

12.50: Refrigerant piping or tubing crossing an open space which affords passageway in any building shall not be less than 7½ feet above the floor unless against the ceiling of such space.

12.51: Refrigerant piping or tubing shall not be placed in a hallway, lobby, stairway, elevator or dumb waiter, shaft, except that such piping or tubing may pass across a hallway if there be no joints in the section in the hallway and it be contained in a rigid metal pipe. The requirements of this paragraph for rigid metal pipe enclosure or placing of piping or tubing and joints in hallways shall not apply to Section (10), Industrial Occupancies.

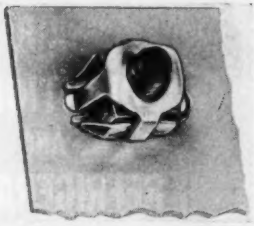
New and Improved Appliances

Kaynar Anchor Type Lock-Nut

Kaynar has developed a new anchor type lock-nut for use on any and all sheet-metal installations where it is convenient or necessary to have the nut member held in place during assembly.

It consists of three parts, the lower half is a "carrier" for the nut and is made of tempered spring steel with a "built-in" lockwasher. The upper half is also made of spring steel and keeps the third part, a plain square nut, contained within the assembly. Two spring ears project from the lower part and are used to engage the sheet of metal to which the nut is to be attached.

The three parts come completely assembled and ready for use. The part to receive



Kaynar Lock-nut

the nut must be provided with two 5/32" diametrically opposed holes and spaced a specified distance from the center hole. The anchor nut assembly is then merely snapped into place by hand—no tools required. The nut then "floats" freely with respect to the center hole to allow for alignment of subsequently assembled parts.

The cost of assembly of the anchor nut to the sheet is cut. Formerly, anchor nuts have been riveted or spotwelded both expensive operations as compared to the easy fastening of this device.

In case of damage to the threads, new unit can be replaced in seconds, whereas with spotwelded or riveted types considerable time is spent for such repair.

An important asset to any fastening device is its ability to align itself with the mating or attaching device.

Can be used anywhere there is vibration without danger of screw shaking loose.

Is lower in cost than similar competitive fasteners.

Use of substantial nuts provides fastener able to take high tensile loads.

One size ¼", ready now, with other sizes available in very near future.

Easy Reciprocating Electric Sander

THE Detroit Surfacing Machine Co. announce their new models XL50 and XL90 Easy Reciprocating Electric Sander.

The company reports numerous new features including floating pistol-grip type handle, mounted on rubber, a more powerful motor, perfected balancing, slide type switch mounted on side of handle, and numerous other improvements.

It is claimed that the new units are practically vibrationless, cut much faster, and are exceedingly simple to operate.

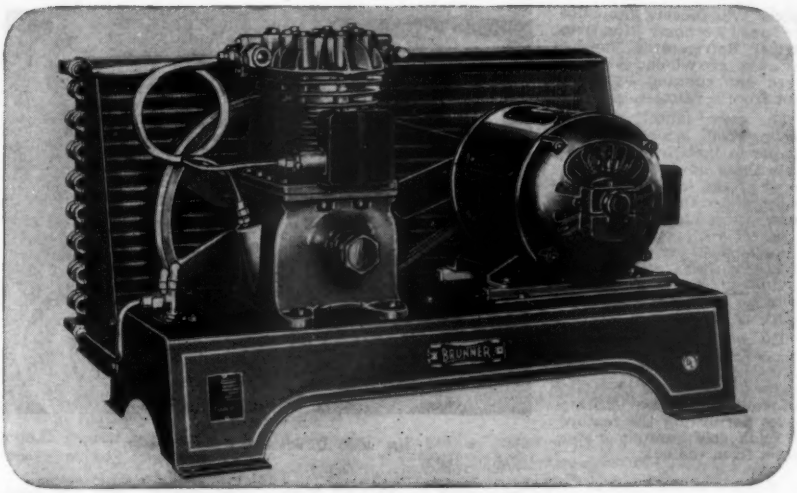
Detachable sanding pads are a unique feature of the Model XL90. A simple snap-action device permits instant attachment of the correct type of pad for the job. To insure maximum efficiency on flat, curved, wet or dry work, pads are furnished of felt, rubber, and other materials of desired shape, size, and degree of flexibility.

Easy Electric Sander Model XL50

New Cold Water Faucet

THE Economy Faucet Company, Newark 1, N. J., makers of beer, coffee and

Cold Water Faucet



There are no orphaned BRUNNER CONDENSING UNITS

Every existing Brunner Condensing Unit can be kept in service, because of ease of obtaining parts. Replacement parts for every one of them are available. In ordering parts, make sure that you give the serial and model number of the unit as well as the part number. If your jobber is unable to immediately supply a desired part, then have him instruct the factory to ship it to you direct.

Is is a fundamental of the Brunner policy to keep Brunner equipment in service. Even should a complete unit require replacement, the Brunner jobber or distributor is usually able to take care of such emergency requirements.

Both he and the factory are not only willing, but anxious to cooperate with you in connection with any servicing or replacement problem. If he cannot answer your questions he will gladly arrange to have a Brunner field service man call upon you.

The factory welcomes direct service inquiries. Brunner depends upon service men to see that their customers get uninterrupted service.

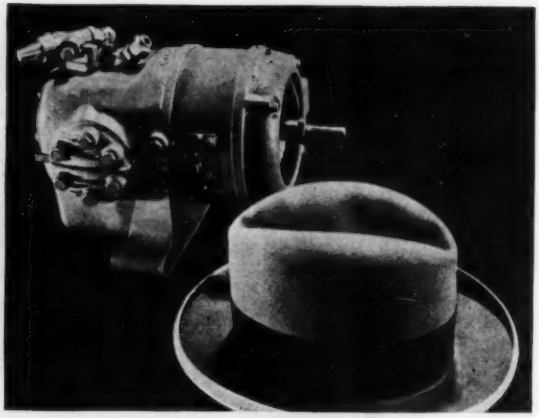
BRUNNER MANUFACTURING CO.
UTICA 1, NEW YORK, U. S. A.

ARMY E NAVY
BRUNNER
FOR OVER 37 YEARS
THE SYMBOL OF QUALITY

special type faucets, announce the new Economy Non-Drip Swivel Refrigerator Faucet, the use of which provides fresh cold running water direct from a refrigerator box.

The new faucet, plus a cooling coil, which is very simple to install, makes possible these advantages. The spout of the faucet, which is attached to the side of the refrigerator box, operates on a swivel. A simple twist of faucet spout from the left to center, and the water flows. A similar twist of the spout, back to the left, and the water is tightly shut off.

The new faucet is offered to manufacturers who desire to improve their new refrigerator models. It is also simple to install on existing boxes permitting the feature of fresh cold running water direct from the box.



The Mills Direct Drive Compressor.

Charging Line for Refrigerants

IN the September REFRIGERATION SERVICE ENGINEER, an article appeared in this section that contained several incorrect statements. The illustration was that of the Aeroquip Self-sealing Coupling and not the Aeroquip Hose Fitting as stated. The

statement was made that the type 1501 hose is designed for 6500 psi to 3250 psi. These are minimum bursting pressures. The one inch and two inch hose with bursting pressures of 3500 and 1500 psi also should not have been referred to as high pressure types.

Illustrated here is the refrigeration charging line and fittings developed by the Aeroquip Corporation. The hose can be made up or replaced without special tools. Assembly consists of placing the socket on the hose then, after locking the nipple and swivel nut together with a standard flare fitting, screw the nipple into the hose and socket with a regular right hand turn.

Refrigeration charging lines with standard ¼ to ⅝ inch SAE fittings are available in lengths of 24 inches to 20 feet.

Mills Direct-Drive Compressor

MILLS INDUSTRIES, INC., Chicago, recently announced details of their new direct-drive compressor. First production will be concentrated on the ⅓ hp size. Final plans call for the fabrication of sizes ranging from ½₂ hp to 5 hp.

In removing the wraps from their direct-drive unit, Mills has released the results of years of study on refrigeration and painstaking tests under trying conditions. The universal demand for compactness and light weight will be built into Mills new compressors. They will be easier to inspect and easier to service; standardization of parts in many models will make them easier to manufacture. These new machines will run quieter than the larger ones they replace and their life will be longer.

An electric motor, assembled directly into the compressor casting, drives the compressor directly with the motor rotor mounted on the compressor shaft. The compressor runs at motor speed, 1750 rpm. This is approximately four times as fast as the standard belted type.

Since these new direct-drive compressors run four times as fast as the old machines, the cylinders are only one-fourth as large for the same capacity. The older conventional belted ⅓ hp condensing unit occupies three cubic feet of space. Mills direct-drive model weighs only 78 pounds and takes up 1.4 cubic feet of space. Thus the new unit saves 40 pounds of weight and over half the usual space.

Exceptional quietness and long life is built into these new compressors with a new pressure lubrication system. The pump is a spiral groove around the main bearing, developing an oil pressure of 30 pounds and delivering two ounces of oil per minute to the moving parts of the smallest compressors.

The new Mills compressors start on the same principle as a fluid drive automobile, with no compressor response until the motor turns up to 300 or 400 rpm. Thus costly motors with high starting torque are not required on the new Mills machines. The secret lies in a one-piece compressor suction valve, an exclusive Mills patent.

How "Freon-22" *helped increase* penicillin production

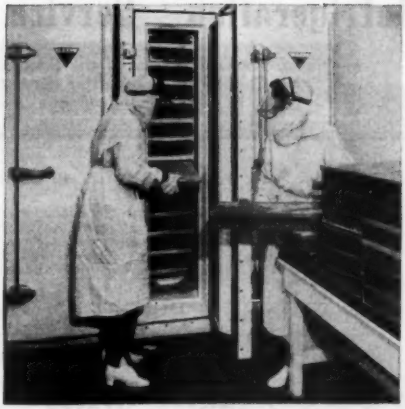
● When life-saving penicillin was evaluated, Army needs exceeded capacity to produce it.

At Commercial Solvents Corp.'s plant, Terre Haute, Ind., the wet method of freezing penicillin, originally installed, created a production "bottleneck." The process was a slow one. To speed up freezing operations, designers turned to "Freon-22."

Freezer cabinets, resembling huge ice-cube makers, were specially designed to freeze up to 6000 vials of the curative drug. Each cabinet was built to accommodate copper trays that hold 166 twenty-c.c. vials of liquid penicillin concentrate. Three Servel two-stage condensing units using "Freon-22" exclusively provide the refrigeration and maintain the required sub-zero temperature.

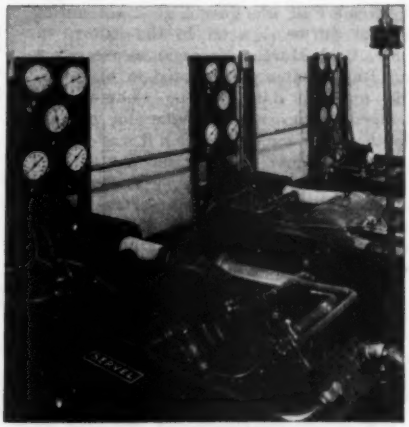
The "bottleneck" was eliminated. Demands were met. Now, an average of 90 billion Oxford Units of penicillin can be produced by Commercial Solvents each month . . . more than four times the entire U.S. output in 1943! The dry method forestalls frostbitten fingers from contact with trays. And, objectionable carry-over of volatile "brine" into a vacuum desiccator has been entirely eliminated.

Of course, freezing installations for the production of penicillin aren't an everyday job. But wherever low-temperature refrigeration is required, engineers are turning to "Freon-22." This non-toxic, non-flammable refrigerant is now serving scores of industries. Complete data will be sent upon request. Kinetic Chemicals, Inc., Tenth and Market Streets, Wilmington 98, Delaware.

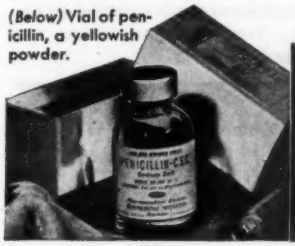


(Above) Attendants placing trays of life-saving penicillin in freezing cabinets.

(Below) The Servel two-stage condensing unit installation. Plant engineered by E. B. Badger & Sons Co.; Cabinet installations by Ideal Cooler Co., St. Louis, Mo.



(Below) Vial of penicillin, a yellowish powder.



KINETIC

FREON

REG. U. S. PAT. OFF.

safe refrigerants

"Freon" is Kinetic's registered trade mark for its fluorine refrigerants and preparations

IMPORTANT

"Freon-22" and "Freon-12" are now available in any quantity for low temperature refrigeration.

Refrigeration Service Engineers Society

Official Announcements of the activities of the International Society and Local Chapters appear in this department as well as articles pertaining to the educational work of the Society.

THE OBJECTS OF THE SOCIETY

To further the education and elevation of its members in the art and science of refrigeration engineering; for the reading and discussion of appropriate papers and lectures; the preparation and distribution among the membership of useful and practical information concerning the design, construction, operation and servicing of refrigerating machinery.

INTERNATIONAL HEADQUARTERS: 433-435 North Waller Ave., CHICAGO 44, ILL.

R.S.E.S. Chapter Notes

CORN BELT CHAPTER

Bloomington, Ill., Oct. 10.—The meeting was called to order by President Joe Woodard at the Hotel Rogers in Bloomington. The Illinois State Convention was discussed by Archie Fait who gave a good accounting of what can be expected by the visitor.

Mr. Carl Marcus resigned as Secretary and Roy Hunter was elected in his place. The meeting date of the Chapter was changed to the second Wednesday of each month. After some discussion it was decided to have a dinner meeting the first meeting after the convention. Ralph Porter made the suggestion that an open forum be held at the end of each meeting to discuss refrigeration problems presented by the members.

BOSTON CHAPTER

Boston, Mass., Aug., 14.—The meeting was called to order at 8:00 P.M. at the Hotel Manger by the president, Mr. L. W. Pierce, with twelve members present.

Due to the war's end that had been announced only an hour before the meeting and to the small attendance, the regular business meeting was postponed until September.

The speaker of the evening, Mr. Larkin of the Century Electric Company, was introduced by the Chairman of the Educational Committee, Mr. Paulin. Mr. Larkin spoke on electric motors as they pertain to the refrigeration industry. Mr. Larkin and two of his associates present at the meeting answered questions after his talk.

Sept. 11.—Mr. Paulin, Chairman of the Educational Committee, introduced Mr. G. T. Arnold of the Boston Edison Company who spoke on service requirements in regard to air conditioning and low temperature installations. Mr. Arnold was given a rising vote of thanks and appreciation.

NEW CHAPTER IN ST. PETERSBURG, FLORIDA

A GROUP of ten service men in the city of St. Petersburg, Florida, met August 20th to consider the advisability of forming a Chapter of the Refrigeration Service Engineers Society in that city.

Mr. R. B. Schroeder was appointed temporary chairman of the meeting and he in turn conducted the election of temporary officers. Joe E. Harris was elected *Temporary President;* R. V. Money, *Treasurer;* R. B. Schroeder, *Secretary.*

Mr. Harris immediately took the chair and continued with the organization meeting. In this initial meeting, ten men signed applications and further business was postponed until September 4th.

In the September 4th meeting, a proposed Constitution and By-Laws was discussed but because of a poor attendance, little further business was accomplished.

A third meeting on September 18th was attended by fifteen service men. It was decided that future meetings would be held on the first Tuesday of each month. Additional applications for membership were signed and Constitution and By-Laws as proposed by the National Society was accepted by the local group. Territorial jurisdiction was limited to Pinellas County.

Membership certificates were distributed to the members present. The president, Mr. Pierce, reported on the State Convention which is to be held on November 4, 1945, at the Hotel Sheridan, Springfield, Mass.

FOX RIVER VALLEY CHAPTER

Oshkosh, Wis.—A series of re-organization meetings have been held in the last few months by the Fox River Valley Chapter. The first was held on July 11th and was called to order by acting chairman E. Mueller. A nominating committee was appointed at that time to select new officers and application blanks for membership were passed out to the attendance.

On August 1st an election of officers was held and those elected were as follows: *President,* William Quinn; *Vice President,* James Fielding; *Treasurer,* Anthony Paulik; *Secretary,* Fred Hansen; *Sergeant-at-Arms,* Ed Schroeder.

Future meeting dates were set for the first and third Wednesday of each month with the thought in mind that the first meeting of each month be devoted to business and the second to educational work.

A third meeting was held on August 15th, but with insufficient attendance to conduct a business meeting. Informal discussion was held on problems of the day, and the meeting adjourned at an early hour.

On September 5th, the meeting was called to order by Clarence Buschkopf and considerable time was devoted to the forthcoming Illinois State Convention.

The meeting of September 19th was again called to order by Clarence Buschkopf and at the conclusion of the business session, Mr. Schedler of Minneapolis Honeywell gave a very interesting talk on controls and their application. Questions and an open discussion occupied some time after the discussion.

TWIN CITIES CHAPTER

Minneapolis, Minn., Aug. 7.—The meeting was called to order by president Frank, and was devoted almost entirely to business matters. Report from the membership committee revealed the following new members had been accepted. They are: Lewis Chadwick, C. R. Kephart, Douglas Mullin, and Floyd Wilson.

Following adjournment of the meeting, motion pictures on aviation gasoline were shown together with pictures taken at the 1945 picnic held by the Chapter.

Sept. 4.—A report was given by Art Palen on the proposed St. Paul Ordinance, and was thoroughly discussed by the membership. Mr. J. D. Smithson's application for membership was read and accepted by the membership committee. Lee Ost gave a report for the picnic committee and announcement was made that an illustrated lecture on electronics will be given at the October meeting.

On the educational program, Art Larson of McQuay, Inc. presented an interesting talk on an experimental laboratory.

Oct. 2.—Further progress on the proposed St. Paul Ordinance was reported by Jack Ehlers, and Henry Sundgaard was appointed as a member of the committee.

In a report from Les Ost, it was revealed that the following application for membership had been received and accepted: Walter Clarke, Walter Donath, both active members; Neil J. Collins, Gordon Constantine and Bertil Idstron, associate members; and junior member Gunnar Hansen.

The educational program included a very interesting talk by Mr. Roche of Westinghouse, who gave a lecture illustrated with slides on electronics.

ONTARIO MAPLE LEAF CHAPTER

Ontario, Can., Sept. 21.—The meeting was held in the King Edward Hotel and was called to order by president H. Donnell. After the roll call of officers and the reading of minutes and correspondence, the president turned the meeting over to Mr. A. E. Doan, chairman of the educational committee who in turn introduced the speaker of the evening, Carl Heilig, General Manager of Air Coils, Ltd. Mr. Heilig's subject was "Estimating Loads and specifying coils for various applications." It was a very fine talk and answered many questions regarding problems of service men on coil areas, compressor capacities and proper-sized tubing for various applications. James Spence expressed the thanks of the Chapter to Mr. Heilig for his splendid presentation.

SACRAMENTO VALLEY CHAPTER

Sacramento, Calif.—A charter was presented to the Sacramento Valley Chapter of the Refrigeration Service Engineers Society, at a recent meeting, by W. W. Allison, a member of the national board, and installation of officers was completed.

Gerald S. Kennedy is *President* of the chapter; Wilbern Griffin, *First Vice-president;* Roy Meisser, *Second Vice-president;*

John Bell, *Treasurer;* William Schaedler, *Secretary;* Al Schoen, *Sergeant-at-Arms;* and Mark Bale, *Education Chairman.*

Ray E. Edling, in charge of the placement of war veterans for the War Manpower Commission, was the principal speaker and he explained the training and refresher courses offered to returning veterans under the GI Bill of Rights.

MULTNOMAH CHAPTER

Portland Ore., Sept. 17.—At a banquet held at the Mallory Hotel, Portland, Oregon, the chapter was presented with its charter by W. W. Allison, one of the directors of the International Society from Los Angeles. The chapter has thirty members on the charter. There are now a number of applications on hand and the membership is expected to increase considerably in a short time.

ATLANTA CHAPTER

Atlanta, Ga., Oct. 2.—The meeting was held at the home of Ed Rawls, where a fish fry was provided for the members by the host. During the business session of the meeting, officers for the year were elected as follows: Carl Cofer, *President;* J. B. Mathis, *First Vice-president;* N. W. Carter, *Second Vice-president;* Harry Mislow, *Treasurer;* Franks A. Bamford, *Secretary.* Directors are: Floyd Parker, *Chairman;* Robert E. Graves, John Parker, Thomas L. Carnell, and Henry Gullatt.

Applications were received for four prospective members and were accepted by the chapter.

PITTSBURGH CHAPTER

Pittsburgh, Pa., Sept. 28.—The meeting was called to order by president Harry Bortz, who introduced Mr. Joseph J.

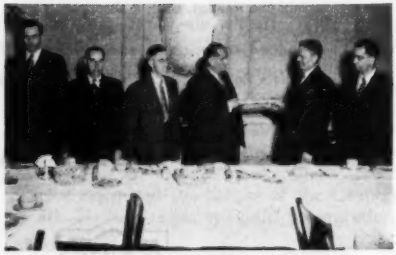
Temporary officers Multnomah Chapter pictured are as follows from left to right: Paul Kringelhede, Secretary; W. Wayne Gibson, Treasurer; Harry Teel, Toastmaster; W. W. Allison, Director from Los Angeles; William A. Fugelson, President; and Wayne Harrington, Vice President.

Harry Teel acted as toast-master; gave an introductory talk and introduced Mr. Allison to the members and prospects. Mr. Allison gave a fine talk; presented the charter to the chapter and obligated new members.

The temporary officers present were: William A. Fugelson, *President;* Wayne Harrington, *First Vice-president;* W. Wayne Gibson, *Treasurer;* Paul Kringelhede, *Secretary.* After the presentation, the president gave an account of the origin and history of the society; read a letter addressed to the officers and members from the International Secretary and a wire addressed likewise from the Acting International President, Mr. Buschkopf.

The other officers were called upon to speak and members to introduce themselves.

This is the 81st chapter of the International Society, and is the first to be formed in Oregon.



O'Toole, business agent, for Local Union 449. Mr. O'Toole gave an interesting talk on the new City Code covering installation and service of refrigeration and air conditioning in the city of Pittsburgh. Mr. O'Toole traced the history of the code's formation, stating that the war had temporarily held up the program. At the present time, the Building Inspection Depart-

ment is preparing a revised code to be presented to the City Council in the near future. Mr. O'Toole revealed that in its present form the code would require plans for proposed installations being submitted to the Inspection Department for approval before installation is made. Operating licenses for contractors would be required with their employees operating under the contractors' permits.

INTERPROVINCIAL ASSOCIATION

Leaside, Ontario, Sept. 17.—The meeting was called to order under the chairmanship of Mr. Sneath, and one of the first orders of business was the report of the membership committee read by the secretary in which two new members were recommended for membership.

The report of the advisory committee by Ken Wood pertained to progress made in the licensing of refrigeration men and in the new Apprenticeship Act. Reports were also received from the finance committee and the circular committee, both of whom had satisfactory progress to report.

CLEVELAND CHAPTER

Cleveland, Ohio, Sept. 11.—President Paul Spring presided over the meeting and after a short business session, Mr. Wilson of the Imperial Brass Manufacturing Company conducted a tube bending and flaring contest. The rules of the contest as well as the blue prints given to each contestant were thoroughly explained by Mr. Wilson. Nine members participated and the judges were Lawrence Gardella and Walter Wright. Three prizes were awarded and the winners were Otto Sippell of Sippell Refrigeration, winner of the first prize, a soldering outfit; second prize won by Thomas Way of Ramsey Bennett was a flaring outfit; and the third prize won by Charles Zembower of Lighthouse Inc. was a tubing cutter.

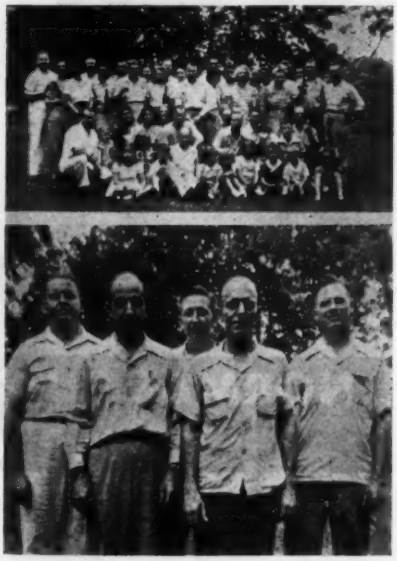
Mr. Warren Farr was called upon to explain Certificate examination which will be held at a later date, and upon making account of those wishing to take this examination, twelve volunteered. Mr. Farr then conducted a question period which was designed to act as a review in preparation for the examination.

The annual Clam Bake was held on September 28rd and was a huge success. One hundred and ten bakes were served, games and races were in order for the children and grown-ups too. Glen Keller does an excellent job of handling the entertainment.

DAYTON CHAPTER

Dayton, Ohio, July 29.—Recreation Park was the scene of a picnic held by the chapter on this date, where an especially good time was enjoyed by members of the chapter.

On August 9th, a meeting was held at Allied Parts with a fair attendance and new members accepted were William D. Carey, Herbert J. Gompf and H. E. Hollis. The planned educational program for this meeting had to be abandoned at the last minute due to the inability of the speaker to attend. Therefore, the educational part of the meeting was devoted to a discussion of service.



Dayton Chapter Picnic. In the lower picture left to right are: G. E. Kibler, Treasurer, D. R. Goll, Secretary, George Click, Second Vice President, G. O. Snyder, Sgt.-At-Arms, and Russell E. Wagner, President.

Sept. 13.—The meeting was again held at Allied Parts with a good attendance. It was decided in this meeting to again revert to two meetings a month held on the second and fourth Thursdays of each month. Current service problems again became the subject of the educational program.

LONG BEACH CHAPTER

Long Beach, Calif., Sept. 12.—Before the meeting was called to order, a buffet lunch was served to the thirty-five members and five visitors present with refreshment chairman Tom Ringros supervising.

During the business meeting a novel plan was submitted by secretary Pat Riley and adopted by the membership; a raffle is to be held at each meeting with a small cash sum and any donated tools or useful articles as prizes; along with the winning numbers, chances are to be drawn to designate who shall bring the necessary food for the next meeting. The idea was tried at this meeting and met with great success and enjoyment, except to Earl Langston, whose number called for him to bring a covered dish (full), while L. M. Ostander drew the assignment of furnishing the cake. Garritt Van Ginkle won the four dollar cash prize, with Dan Kittle and Roy Hite drawing two dollar tool orders, which were donated by the two local supply houses, Van's and Allied.

Our new educational feature started last meeting (open discussion on current refrigeration problems) proved both worthwhile and entertaining as the subject of converting systems from sulphur to freon was continued.

The problem of placing new men in the territory, especially veterans, was discussed, and it was decided to refer them, and anyone wanting a man, to the supply houses.

Educational Chairman Van Ginkle introduced Mr. Walter Beach of the Gates Rubber Co., who gave an interesting talk on belt sizing and usage and then answered the many questions flung at him from the floor.

Since a good many new men are starting up in business doing domestic servicing, it was discussed pro and con for the local chapter to make a recommendation to the City Council that those doing that type of work be required to take and pass the journeyman examination as is called for in commercial work by the local code. It was decided to hold the matter over for further consideration and thought.

SAN DIEGO CHAPTER

San Diego, Calif., Sept. 20.—This regular meeting was held in the patio of the home of Mr. Al Jorgenson in El Cajon, a suburb of San Diego. Mr. Jorgenson, who is famous for his barbecued dinners, was the chef of the evening. Huge, thick delicious steaks were served to fifty members and guests. Mr. Jorgenson was ably assisted by the members of the month's entertainment committee, Mr. K. Young and Mr. N. E. McDougal. After the members gorged themselves on the steaks with all the trimmings and washed them down with a variety of liquid refreshments, a short business meet-

ing was held. Applications for three new members were voted upon and approved. All committee reports and other business was ordered carried forward until the next regular meeting. The meeting wound up with a general get-together and later quite a few members journeyed to the home of Mr. J. M. Turner where two-card poo, our official card game, was played until the wee small hours.

OUR APOLOGIES

READERS of the San Diego and Cleveland Chapter minutes published in the September issue are probably wondering how it was possible that a speaker appearing before the San Diego Chapter was reported by the Cleveland Chapter.

Apologies and an explanation are in order. The last paragraph of San Diego Chapter minutes became detached in the final make-up copy and was erroneously placed on the end of the Cleveland Chapter minutes.

ST. LOUIS CHAPTER

St. Louis, Mo., July 17.—On the educational program, Dick Bland read a Question Sheet furnished by Carl Olin of the Servel, Inc. on Service Pointers for hermetic and open-type units. Points were talked over with votes being taken on the pros and cons of various servicing angles for the different equipment.

Meeting was officially closed with the serving of coffee, ham sandwiches and a spaghetti plate.

Aug. 21.—The annual chapter dinner was held in the Candlelight House rathskellar. By 8:30, a majority having arrived, dinner was served; either chicken or beef tenderloin, according to the individual preference.

After eating, members enjoyed the viewing of a colored film put out by the General Electric Co. on handling and freezing of fresh vegetables, fruits, fish, etc. This was followed by a comic cartoon and ended with everybody joining in the singing of a number of old familiar songs. Next, five $1.00 bills, as attendance prizes, were given to the people holding the lucky numbers. Those who cared to, then danced, and as members gradually left, the remaining couples adjourned to the bar room, where they sat talking and planning on an outing yet to come. Approximately 30 couples attended.

Sept. 18.—The Bar-B-Q Picnic Supper was held in the brightly lit backyard at the home of S. N. Mohler.

The officers having previously arranged for the drinks, bread, pickles, meat, ice cream, plates, etc. which were furnished by the Society; the balance of the meal was made by the wives who brought spaghetti, slaw, potato salad, cakes, etc. The couples started arriving at 6:30 and by 7:30 sat down to the tables scattered about the lawn. As guests continued to come, the serving tables were constantly replenished and a merry feast went on throughout the evening. Various games were played, chief of which were "Autographs," wherein each guest had pencil and paper and tried to secure as many signatures as possible within a given time. Prizes for their diligence in this game were awarded to Mrs. Menaugh and Dick Bland. A "Memory Test" brought prizes to Bill Faragie and Lee Ross, while the attendance award went to Mrs. Whitmore.

A thoroughly enjoyable evening was had by all for which a special vote of thanks from the Society goes to Mr. and Mrs. S. N. Mohler who generously donated their house and yard, and to Bill Matejka who secured the ribs and franks. The full attendance was about 80 people and those who were unable to come really missed a swell meeting.

KANSAS CITY CHAPTER

Kansas City, Mo., Aug. 1.—Many items pertaining to "Service Improvements" were discussed. The remaining part of the meeting was used to discuss service rates and conditions that happen in a refrigerating system after years of operation, which prove to be very interesting.

Sept. 5.—This time being our busy season, and the evening very warm, the attendance was small, so no attempt was made to hold "Educational Hour." Plans were discussed for an R.S.E.S. picnic.

Sept. 17.—The chapter held its Annual Picnic this date at Swope Park in the clear autumn skies and chilling winds.

Thirty-three enjoyed a picnic lunch with hot coffee and other refreshments furnished by the chapter, which was topped off by playing croquet and horseshoes, by substituting dobbins footwear with condensing unit belts. As darkness fell, all were homeward bound.

ST. JOSEPH CHAPTER

St. Joseph, Mo., Aug. 26.—The importance of refrigeration to the health and safety of the public was discussed at a meeting of the

Refrigeration Associaton of St. Joseph at a recent meeting at the Bristol Supply Company. Refrigeration is a necessity which requires prompt, dependable service when needed, it was stressed.

MILE HIGH CHAPTER

Denver, Col., Sept. 17.—Mr. Lyndle Barley, president, presided over the meeting, conducting a rather lengthy business session in which chairmen of the educational and entertainment committees presented a budget for the coming year. The budget proposed educational and entertainment funds in the amount of $855.00 be appropriated for forthcoming programs.

Mr. Warner Burbank offered a meeting place for the October meeting, including refreshments and an educational program. His offer was accepted. The educational and entertainment period of the evening included two films furnished by General Motors entitled "Deisel the Modern Power" and "How Not to Conduct a Meeting." Both were very much enjoyed, and after adjournment the members enjoyed refreshments.

WYOMING VALLEY CHAPTER

Wilkesbarre, Pa., Sept. 10.—After the usual business session, a lengthy discussion took place on the elastic sleeve seal manufactured by Temperature Device Corporation. This was followed by another discussion concerning the status of returning service men, and others who wish to start in the refrigeration service business. It was felt that the returning service men should be given as much help as possible, and contacted in regards to membership in the Society. The secretary was instructed to make arrangements for the appearance of manufacturers' representatives on future educational programs of meetings.

GREATER TOLEDO CHAPTER

Toledo, Ohio, Sept. 16.—One of the features of the evening was a talk by a representative of the Lincoln Life Insurance Company, who explained policies offered to refrigeration men operating their own business.

The chapter voted to send cash gifts to all men still in the armed forces and who were formerly members of the chapter. A contribution was also made to the "Sgt. Carl Winzeler Fund," a wounded veteran of Toledo.

The door prize was won by Vice President John Murphy, and the final portion of the meeting was devoted to a display of sound movies enjoyed by everyone.

NIAGARA FRONTIER CHAPTER

Buffalo, N. Y., Sept. 22.—This was the date of the annual corn roast. The occasion was attended by twenty-four members and their wives or sweethearts. A pleasant social evening was the result.

⁂

Ladies Auxiliary

TWIN CITIES AUXILIARY

Minneapolis, Minn., Sept. 8.—In place of the regular monthly meeting, the auxiliary had a weiner roast, and Mrs. George Klahn entertained the members with request songs on the piano. A phonograph connected through an amplifier provided music for dancing. Eleven members and their husbands enjoyed the evening.

Oct. 2.—The chapter was entertained at an open house gathering in the home of Mrs. Lars Berheim, with Mrs. Swanson and Mrs. Sigafoos assisting. There were ten guests and fourteen members present. Bingo was the entertaining feature of the evening with prizes for everyone.

A delicious lunch was served to the ladies and their husbands at the close of the evening. Mrs. Grow received the door prize.

KANSAS CITY AUXILIARY

Kansas City, Mo., Sept. 5.—The greater part of the evening was devoted to business of the chapter, and to future plans. Among future plans was authorization to purchase a $10 gift which would be raffled off at the December meeting. So thoroughly occupied were the members in their business session that no time was allowed for games and entertainment. Therefore, the prizes that had been provided for the evening were distributed by drawing of members. The winners were Mrs. Mendenhall and Mrs. Meeker.

⁂

Robert C. Martin, Jr.
Shreveport, La.

I have read this book for the last four years and it is more than worth the price. Also send me a Wright's Head-Back Pressure Calculator. This Calculator cuts out guess work.

UNIVERSAL COOLER AND INTERNATIONAL DETROLA MERGE

THE merger of Universal Cooler Corporation, Marion, Ohio, and Utah Radio Products Company, Chicago, into International Detrola Corporation was approved today by more than the required two-thirds vote of each stock in shareholders' meetings conducted by all three companies. It is expected the merger will be effective October 31, 1945.

The meetings were held in Detroit, Chicago and Elkhart, Ind., respectively.

PEERLESS MOVING TO CHICAGO

R. W. KRITZER, president of Peerless of America, Inc., announces sale of its former factory in Marion, Indiana. This is the first consummated move in Peerless' postwar policy to separate its manufacturing operations into specialized manufacturing types. Mass production items for sale in the refrigeration and air conditioning trade will be separated completely from custom built equipment. Mass production machinery now being designed and process lines being worked out for such items will be installed in separate factories located in the close-in area of Chicago manufacturing district.

This method of manufacturing, variously called decentralization or specializing, has long been a goal of Peerless of America. The indiscriminate manufacture of various items in one factory involving custom built coils, production line built condensers, precision built instruments, valves and controls, has generally resulted in inefficiencies that were impossible to eliminate without physically separating these manufacturing units. Peerless of America has felt that with the coming of VJ-Day and complete reconversion from 100 per cent war work to a new line of peace products for the refrigeration and air conditioning trade, the ideal time had arrived to achieve this result.

R. W. Kritzer further states that Peerless will be able to give better deliveries, better merchandise and better prices under this decentralized method of specialized manufacturing units. This move coming as it does at this time will have the least effect upon Peerless deliveries inasmuch as the machinery and new processes will be shipped and installed direct in Chicago units rather than being shipped to our former factory. The great mass of government machinery that was utilized by Peerless in the war work, under these circumstances, will not interfere with the installation of the new process machinery and deliveries of former and new Peerless products will be better.

The Executive and General Sales Offices of Peerless of America will continue to be at 333 North Michigan Avenue, Chicago, as in the past. All orders and correspondence will be handled from these offices.

Mr. Kritzer further states that this latest move in the expansion of Peerless of America is taken at the threshold of what, to qualified experts, is believed to be the coming greatest era of refrigeration and air conditioning. The addition of new products, development and improvement of old products, and acquisition of important elements of the industry, will be continued under this new and modern method of manufacturing.

G.E. ADOPTS NATIONAL PRICE POLICY

THE General Electric Company is the first manufacturer of a complete line of household electrical appliances to adopt a national pricing policy on all its appliance products.

In announcing this policy today, C. R. Pritchard, general sales manager of the Company's Appliance & Merchandise Department, said that "from now on, each G-E major and small appliance will be sold at the same price to consumers in every part of the United States—whether they live in Seattle, San Antonio or Augusta, Me."

Prior to the war, the Company maintained a national-delivered-one-price policy on small appliances such as irons, fans, toasters and roasters.

"Now we are extending this advertised price policy," said Mr. Pritchard, "in order to give the public the same advantage on all G-E home appliances—on refrigerators, home freezers, ranges, water heaters, washers, dryers, ironers, dishwashers and Disposalls, as well as on small appliances."

The prices will include the cost of delivery and federal excise tax, but because state and local taxes vary so widely these are of necessity excluded from the national prices. And because installation costs of ranges and water heaters also vary in different localities, the national prices on these appliances are exclusive of installation.

FERRILL RETURNS TO KEROTEST

AFTER four and one-half years in the armed forces, H. E. Ferrill has returned to Kerotest Manufacturing Company, Pittsburgh, as sales and development engineer of the brass division, according to an announcement by George R. Allen, general sales manager of the Kerotest Brass Division.

S S S

FOLDER ON TUBING TOOLS ISSUED BY IMPERIAL

A HANDY tube-working tool selector is one of the features of a new folder on tubing tools recently published by The Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago 7, Ill. The tools are for use with copper, brass, aluminum, thin-wall steel and similar tubing.

Flaring tools, tube cutters, tube benders, coil makers, pinch-off tools, swedging tools, reamers, refacing tools and soldering equipment are all included. There are also a number of handy tool kits.

Copies of this folder, designated as No. 347, may be obtained by writing to the manufacturer.

S S S

ALCO PROMOTES FOUR KEY MEN

FOUR new appointments of key personnel, all from within the organization, have been announced by Russell Maguire, president of Alco Valve Co., St. Louis, designers and manufacturers of automatic refrigerant control devices.

John E. Dube, a vice president, has also been appointed general manager, Charles B. Lockwood, also a vice president, assistant general manager, Roger P. Kipp, sales manager, and Franklin M. MacDougall, chief engineer.

Mr. Dube, active in the automatic control industry for the last 12 years, joined the Alco organization in 1938 and soon after became head of the engineering department. He was elected vice presidnt in 1942.

Mr. Lockwood, secretary-treasurer of the company since 1942, was recently elected a vice president, and now becomes assistant general manager too.

Mr. Kipp has been prominently identified with the sales department since he joined Alco in 1937; with the exception of the war years, 1942-45, when he served the company in the important post of procurement director. Early this year he was re-appointed a divisional sales manager, and now heads the entire sales organization.

Mr. MacDougall joined the firm in 1936 and for the past few years has served as assistant director of engineering. As chief engineer he now becomes head of that department, succeeding Mr. Dube.

Messrs. Dube, Kipp and MacDougall have been closely associated with both the engineering and marketing problems of the industry for a number of years and bring a wealth of practical refrigeration experience to their new positions.

These promotions represent a step in the company's post war expansion plans. In addition to a considerable increase in the company's working capital with which to carry out this post war program, it was announced, emphasis will be placed on engineering and production facilities, and the pattern of sales engineering and jobber distribution will be greatly expanded.

Above: Left, John E. Dube, Vice President and General Manager. Right, Charles B. Lockwood, Vice President and Assistant General Manager. Below: Left, Roger P. Kipp, Sales Manager. Right, Franklin M. McDougall, Chief Engineer.

YORK FORMS DISTRIBUTOR CORPORATION

S. E. LAUER, president of York Corporation, announced today the formation of York Distributors, Inc., a fully-owned subsidiary of York Corporation, to provide complete sales, installation, and service for York commercial air conditioning and refrigeration equipment in the New York area.

Mr. W. A. Pusch has been named president and treasurer of the new corporation. Other officers are R. C. Follett, vice president and sales manager, and John F. Lebor, secretary. The board of directors is made up of Mr. Lauer, Mr. Pusch, E. A. Kleinschmidt, J. R. Hertzler and A. Christensen.

New and permanent offices, comprising approximately 17,000 square feet of floor space, are now under construction at 11-30 46th Road, Long Island City, and will be ready for occupancy around January 1. The new building will house executive offices, shop facilities, service department, sales and display rooms for York air conditioning and refrigeration equipment, and a complete stock of parts. Present temporary offices of the company are at 41-11 28th Street, Long Island City.

HAIGHT APPOINTED TO KELVINATOR POST

APPOINTMENT of E. G. "Red" Haight as sales engineer, contract sales division, was announced today by Edward R. Legg, assistant general sales manager, Kelvinator Division, Nash-Kelvinator Corporation.

E. G. HAIGHT

Haight, whose headquarters will be in Detroit, was formerly chief application engineer of the Universal Cooler Corporation. He joined Universal in 1935 as assistant service manager and later became assistant sales manager.

After attending the University of Michigan, Haight entered the refrigeration business with Copeland Product Corporation in Detroit. He remained with Copeland until joining Universal, serving in various engineering capacities and as field service representative.

IMPROVEMENTS AND REFINEMENTS MARK B-B NEW FOUNTAINS

THE Bastian-Blessing Company announces that its new 1946 line of fountain-luncheonette equipment, which has been in production for several weeks, contains improvements and refinements which, in the opinion of its officials, make it the best and most attractive equipment of its kind ever produced.

It is stated that while the Company's factories have been in full production for the past two years on soda fountains, ice cream cabinets, carbonators, ice cream freezers and other equipment for our armed forces, Bastian-Blessing engineers have long been engaged in improving and refining fountain equipment for its peacetime customers.

The announcement further states that its new 1946 models embody 38 of the 40 features most frequently requested by fountain operators. Two of the most outstanding money-making features, protected by patents, will be available only on Bastian-Blessing fountains.

Descriptive literature and additional information will be sent upon request by The Bastian-Blessing Company, 4203 Peterson Avenue, Chicago 30, Illinois.

HENRY ANNOUNCES ORGANIZATION CHANGES

GUY J. HENRY, president and Chairman of the Board of Henry Valve Company, announced personnel changes and new plans for the Company today.

Charles V. Gary, who was recently released to inactive duty in the Naval Reserve after three years service, becomes Executive Vice-President and General Manager. Gary is well known in the industry and was Sales Manager of the company prior to the war.

RICHARD S. DAWSON, Vice President in charge of sales, right. CHARLES V. GARY, Vice President and General Manager, left.

Richard S. Dawson becomes Vice-President in charge of sales. Dawson was formerly Sales Manager of the Alco Valve Company. He has been in the industry since 1926 and is well known for his educational activities with R.S.E.S., A.S.R.E., and other industry associations. He will be assisted by George W. Wilson who has been active as Manager of Jobber Sales.

Douglas K. McIlvaine will be Works Manager, including administration of the engineering department. McIlvaine formerly held a responsible executive position with a large electric utility company. During the war he was engaged in electrical engineering and manufacturing in the electronic and control field. He is well known in the electrical industry and is a member of A.I.E.E., I.R.E., A.S.R.E., and other engineering groups.

Evan Jones will be Electrical Engineer. He has wide experience in the instrument and control fields.

Guy Henry states "Progressive management these days must take positive action for (1), the continued satisfaction of its customers and (2), the welfare of its employees to secure the success of the company. The addition of the prominent and experienced executive personnel has been made necessary by the continued growth of the company, and to expand its present line of flow control devices. This activity will result in advanced product designs, even higher standards of performance and increased value to our customers. Research and development will be furthered in keeping with the Henry 'famous firsts' policy."

The second phase of the program has always been fostered at Henry. To insure the most satisfactory industrial relations, adequate compensation has been a powerful incentive factor. A profit sharing plan for all employees and an income retirement pension plan have been in effect for over five years.

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U. S. GAUGE CO. ANNOUNCES APPOINTMENTS FORECASTS SALES

AS PART of the plan to enlarge the sales organization of the United States Gauge Company, I. Newton Becker, Vice-President in charge of Sales, Engineering and Research, announces the promotion of W. S. O'Connor to National Field Sales Manager to assist L. L. Corcoran, Sales Manager. H. M. Bear will succeed Mr. O'Connor as District Manager of sales territory covered by the New York office.

Sales May Double

In view of the trend of orders received during the past few months from industries requiring United States Gauge instruments, Mr. Becker predicts that the company expects to maintain a sales level equal to twice that of the immediate pre-war dollar volume.

Tooling of newly designed instruments is being completed and it is expected that the first modernized gauge will roll off the production line within a few weeks. Experimental, metallurgical and research facilities are being expanded and moved to new air conditioned quarters under the direction of A. E. LeVan, head of research and development.

Advertisers Index

Classified Ads

Rate: Two Dollars for fifty words or less, 30 cents for each additional ten words or less.

FOR SALE—Remanufactured air and water-cooled condensing units. ¼ h.p. up to 1½ h.p. Frosted food & ice cream cabinets. Edison Cooling Corp. 310 East 149th St., New York 51, N.Y.

POSITION WANTED—By Sales Engineer. Pre-war commercial sales and installation experience. Just released from service. Age 39. Particulars on request. H. A. Phillips, 2309 Montgomery St., Oroville, Calif.

SERVICE AGENCIES—Sell the Sub-Zero Freezer. We can deliver in sizes of 9, 12 and 18 cubic feet capacity immediately. Can ship one or a carload. Next 30 days will find the freezer market a very profitable one. Wire for further particulars. Sub-Zero Freezer Co. of Illinois, Kankakee, Ill.

POSITION WANTED—Service manager with 15 years experience on low and high pressure equipment desires connection with large Texas or nearby concern, such as a distributor or large department store, etc. 34 years old; 3 years college. Write L. B. Pugh, 4107 Orlando, Dallas 11, Texas, or phone W-0278.

WANTED—Experienced refrigeration service men for commercial and domestic refrigeration work by established central Wisconsin concern. Good working conditions; hourly wage, plus commission; truck furnished. Please state full qualifications in letter. Address Box OT-4, The Refrigeration Service Engineer, 433 N. Waller Ave., Chicago 44, Ill.

COMMERCIAL APPLICATION & SERVICE ENGINEERS—Large refrigeration firm with growing export business has openings in several territories for qualified refrigeration application and service engineers. Knowledge foreign languages helpful. Write giving full details, experience and references. Address Box SP-2, The Refrigeration Service Engineer, 435 N. Waller Ave., Chicago 44, Ill.

INCOME TAX PAYERS—You can save by being prepared. Get our Copyrighted Income Tax Record. No books to read. Easy to understand. Schedules and how to figure include Business, Rental Property, Rental Property partly occupied by Owner, Medical, Car and Truck, use of part of your residence for business and other vital information. Price $1.00. Berman, Box 335, Worcester 1, Mass.

WANTED—Serviceman—Commercial. Opportunity with established service agency for clean cut, experienced serviceman. Position steady, with opportunity for increased wages. Truck furnished. Salary to start $85.00 a week guaranteed throughout the year. Give full particulars in letter or if nearby, please phone before coming. T & R Supply Co., 263-275 West Court St., Kankakee, Ill.

POSITION WANTED—Refrigeration and Air Conditioning service engineer with ten years practical experience in installation, engineering and sales work. Recently discharged from Navy; will locate in or near Chicago. Am 34 years old, married, with one year college education and technical background. Have had frozen food experience. Address Box OT-7, The Refrigeration Service Engineer, 433 N. Waller Ave., Chicago 44, Ill.

FROM THE REFRIGERATION SERVICE CONTRACTOR'S ANGLE

***Mr. WARREN W. FARR,** of*
***Refrigeration Maintenance Corporation, Cleveland,** says—*

"A QUALITY MATERIAL ALWAYS HELPS OUR BUSINESS FORGE AHEAD!"

"A business like ours rises or falls on the skill of our men and the type of materials we use. The removal of moisture is only half of our work, because moisture removal is only half of the job . . . other elements must be removed, too And there is where Davison's Silica Gel excels. We tried other drying agents, but after standardizing on Davison's Silica Gel, its many additional advantages over other drying agents helped our business forge ahead."

Order Davison's Silica Gel From Your Jobber . . in Factory-Charged Dehydrators and for Refilling.

GIVES YOU—1. Maximum capacity for moisture prevents freeze-ups . . . is not affected by oil; **2.** Instant action; **3.** Removal of Acids, Corrosive compounds and other impurities; **4.** Freedom from Channelling of Refrigerant; **5.** Safety—will not attack metals or alloys.

CURTIS BAY WORKS

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